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ABSTRACT

The Beginning Teacher Evaluation Study (BTES), Phase II, was a research project on effective teaching behavior--what teachers do that significantly affects what and how pupils learn. The purposes of Phase II were to (1) develop an assessment system for measuring teacher and pupil behaviors and other factors which could influence each of them and their interrelationships and (2) generate hypotheses about the interrelationships among teacher and pupil behaviors and related factors. Forty-one second grade and 54 fifth grade experienced teachers participated in the study. This volume of the final report describes the Reading and Mathematics Observation System (RAMOS) which is designed for real time documentation of classroom activities of teachers, student groups, or individual students. It is best suited to observation of classroom instruction in the areas of reading and mathematics at the elementary school level. With this category system a trained observer can record the events in a regular classroom within his view in comprehensive detail and in real time. The system permits the observer to focus either on the teacher, a group of students, or a small number of target students, depending on the purpose of the observation. Statistical analysis of the resulting data is presented. (RC)

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PR-76-9

BEGINNING TEACHER EVALUATION STUDY
PHASE II 1973-74

FINAL REPORT

VOLUME III.2.

READING AND MATHEMATICS OBSERVATION SYSTEM: DESCRIPTION AND ANALYSIS OF TIME EXPENDITURES

BY

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2

EDUCATIONAL TESTING SERVICE
PRINCETON, NEW JERSEY

BEGINNING TEACHER EVALUATION STUDY: PHASE II

FINAL REPORT: VOLUME III.2.

READING AND MATHEMATICS OBSERVATION SYSTEM: DESCRIPTION AND ANALYSIS OF TIME EXPENDITURES

by

Robert Calfee

Kathryn Hoover Calfee

Stanford University

A project conducted by Educational Testing Service for the California Commission for Teacher Preparation and Licensing and funded by the National Institute of Education.

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PREFACE

The Beginning Teacher Evaluation Study (BTES) is a long-term project of the California Commission for Teacher Preparation and Licensing. The Commission is responsible for licensing teachers in California and is trying to determine what factors should be considered in this process.

The second phase of the study was conducted by Educational Testing Service for the Commission. Phase II was the hypotheses-generating and instrument-development phase of BTES. ETS had two tasks: (1) to develop an assessment system to measure both teacher and pupil behaviors as well as other factors which might be related to these behaviors; and (2) to generate hypotheses about the interrelationships between teacher and pupil behaviors and related factors.

The study was conducted in 43 schools in eight districts throughout the state of California. A total of 41 second grade teachers and 54 fifth grade teachers participated in the project during Phase II.

The final report for Phase II consists of several volumes. Volume I describes the design and rationale for the experimental design and data analysis procedures and includes the major findings of Phase II. Volume II describes the conduct of the field study and the sample of participants.

Because of the complex nature of Phase II, a variety of techniques was used to measure teacher and pupil behaviors. They are described in Volumes III, IV, and V. Results are also included in these volumes.

Volume III describes the observation systems in detail and is available in three separately bound sections. The first section, Volume III.1., describes the behavior recording observation system used in the project--APPLE (Anectdotal Process for Promoting the Learning Experience). Volume III.2. describes the category system used to observe classroom activities--

RAMOS (Reading and Mathematics Observation System). The third section of this volume, III.3., covers the videotaping of instructional activities during reading and mathematics.

Volume IV concerns other aspects of the measurement system and covers both the pupil and teacher test batteries.

The fifth volume covers a series of small studies done as part of Phase II. Volume V.1. looks at teacher aptitudes as related to teacher behaviors. Volume V.2. is concerned with the relationship between teacher expectations and pupil performance. Volume V.3. reviews performance of pupils in the BTES teachers' classrooms for two years prior to Phase II, the historical test data. Volume V.4. discusses the Diagnostic Film Test, a device designed to assess teachers' skills in diagnosing reading problems and prescribing corrective action. Volume V.5. summarizes the results of work diaries completed by the teachers on their reading and mathematics instructional program.

Information on the availability of these volumes can be obtained from:

Dr. Frederick J. McDonald
Educational Studies
Educational Testing Service
Princeton, NJ 08540

Information on other phases of BTES can be obtained from:

California Commission for Teacher
Preparation and Licensing
1020 O Street
Sacramento, CA 95814

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RAMOS was designed by Robert Calfee and Kathryn Hoover Calfee, with assistance from a number of individuals including: Carol Dasgupta, Sarah Johnson, Elizabeth Orem, Bernard Rihn, Barbara Tanner, and Barbara Tingey.

Ellen Reichenba[illegible], Nancy Zeller, and Robert Cullenb[illegible] assisted in training of the BTES obser[illegible]rs for RAMOS and supervision of the project. The observers were: Linda Baim, Carla Body, John Clay, Gay Howland, Marilyn Holgate, Beryl Martinson, Vi Moyer, Elisabeth Ploessel, Laurie Racine, Phyllis Weddle, and Joseph Wharton. The school districts of Inglewood, Montclair, and Palo Alto were generous in allowing observers to visit classrooms for training purposes.

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Reading and Mathematics Observation System

The Reading and Mathematics Observation System, RAMOS, is designed for real time documentation of classroom activities of teachers, student groups, or individual students. It is best suited to observation of classroom instruction in the areas of reading and mathematics at the elementary level. With it, a trained observer can record the events in a regular classroom within his view in comprehensive detail and in real time. The system permits the observer to focus either on the teacher, a group of students, or a small number of target students, depending on the purpose of the observation.

Once an observation interval (generally between 30 minutes and an hour) is initiated, the observer records the events that transpire as a series of "lines," each line containing categorical entries describing the nature of the event. These lines provide answers to such questions as:

> Who are the students being observed? How many are there in the group? Where are they located in the room? Which target students, if any, are in the group?
>
> Who are the adults in the classroom? How many adults are there? Where are they, and with what student groups are they associated?
>
> What is going on at any given time? What is each student group and adult doing? If engaged in an instructional activity, how many students and adults are involved, and where are they?
>
> Who is doing the instructing? What is the nature of the instructor (teacher, aide, volunteer, tutor, etc.)? What role is the instructor playing (direct instruction, discipline, class management, etc.)?
>
> What is the content of instruction? What subject matter is being taught? What skills and activities are involved? What materials are being used? What kinds of feedback are available to the students?

What is the response of the group to instruction? What kinds of responses are required or expected of the students? What is the judged level of attention to instruction? Relative adequacy of performance? Amount of social interaction between students?

From the records obtained in this manner. several measures have been extracted for the purposes of the BTES project. The primary aim of these measures is to describe the manner in which time is used in the classroom. The measures will be described in more detail later, but they include (1) total time spent on activities directly or indirectly related to reading and mathematics, (2) the character and variety of those activities, and (3) the relative distribution of time spent in various activities.

Development of RAMOS

RAMOS is a direct adaptation of an observation system developed earlier by Calfee and Hoover, the Reading Diary Observation system. This system, in turn, was an adaptation of the format of an earlier instrument developed by the senior author and others. Because of the close relation of this system to other research projects, an historical summary is in order.

Much of the content of both the Reading Diary Study system and RAMOS is a refinement of earlier field instruments developed by the junior author. The preliminary work was supported by grants from the Office of Education and the Carnegie Foundation.

In the academic year 1970-71, Calfee, M. Even, and R. L. Venezky developed the concept of a real-time, computer compatible observation system. This was based on observations done in 30 schools in Israel,

Wisconsin, and California. A proposal, Establishing an Observational Data Base for Design of School Environments (Calfee, Even, & Venezky, 1971) details this proposed study.

In the academic year 1971-72, Calfee conducted studies of basic reading skills in kindergarten and first grade students in the San Jose Unified School District using funds from the U.S. Office of Education. This work led to a proposal for an observational study of reading acquisition, which was submitted to the Carnegie Foundation (Calfee, 1972).

In the academic year 1972-73, planning was completed for a pilot study of teacher and student behavior during the initial year of reading instruction. Funding for a program of reading research, including a Reading Diary Study, was granted by the Carnegie Foundation on October 30, 1972. Instrument development, field testing, and refinement of an observational system for the Reading Diary was carried out during this period.

In the academic year 1973-74, the Reading Diary Study was begun in ten classrooms in the San Jose Unified School District. Modification of the Reading Diary Study Form for use by ETS in Phase II of the Beginning Teacher Evaluation Study was undertaken as part of continuing work on the Reading Diary. Further modifications and additions of some content material to match the skills tested in the fall test battery of the Beginning Teacher Evaluation Study were finished during Christmas and field tested during January, 1974. Pilot testing was done in the Palo Alto Unified School District and the San Jose Unified School District and was supported by Carnegie funds. The following RAMOS documents were prepared in January of 1974:

Start Form, Event Form, Users Manual, Debriefing Form, Classroom Summary Record, and General Descriptive Comments. During February, the Users Manual was supplemented by two sample coding sheets with sample classroom activities correctly coded, titled MATHNUT and RAINBOW ROOM.

Initial development, all revisions made during the subsequent refinement, and all documents were produced at Stanford University by personnel supported by the Carnegie Foundation grant. Certain modifications and additions to RAMOS were specially designed to fit the needs of the BTES study, but RAMOS was and continues to be the primary observational system for the Reading Diary Study.

Procedures for Conducting a RAMOS Observation

Full details of the method of carrying out a RAMOS observations can be found in the RAMOS Manual (Calfee and Hoover, 1974), shown in Appendix A. A brief account is given here, sufficient only for understanding the character of the RAMOS data set.

An observer begins the record by filling in a START FORM (Figure 1). This is a labeled computer coding form for recording the teacher, school, district, and physical characteristics of the classroom about to be observed. Characteristics of the student groups and the instructors are also recorded before the actual observation begins.

RAMOS START FORM

Robert C. Calfee and Kathryn A. Hoover, Stanford, California.
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GENERAL INFORMATION

SCHOOL/LOCATION	GR	TEACHER	DATE	OBSER	SER. CODE	TIME IN	TIME OUT
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	18 19	20 21 22 23 24 25 26 27 28 29 30 31	32 33 34 35 36 37	38 39 40 41	42 43 44	45 46 47 48	49 50 51 52

FOCUS

COMMENTS

CHART INFORMATION

I.D.	LOCATION	INST	SUBJ	GRUP	TARGET STUDENTS A	B	C	D	READING CURRIC.	MATH CURRIC.
1 2 3 4 5	6 7 8 9 10 11 12 13 14	15 16 17	18 19	20	21 22 23 24 25 26 27	28 29 30 31 32 33 34 35			36 37 38 39 40 41 42 43	44 45 46 47 48 49 50 51 52 53

FOCUS

COMMENTS

INSTRUCTOR INFORMATION

I.D.	NAME	GROUP	SUBJ.	LOCATION
1 2 3 4 5	6 7 8 9 10 11 12 13 14	15 16 17 18 19	20 21 22 23	24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53

FOCUS

COMMENTS

CLASSROOM GRID

A	B	C	D	E
F	G	H	J	K
L	M	N	P	Q
R	S	T	U	V

Figure 1.

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The EVENT FORM (Figure 2) is a labeled coding form used for recording each classroom event or change in real time. The initial condition of all existing groups is fully described, the instructor and the content of instruction is documented, and certain aspects of the student response are recorded. After the first lines have been completed, further lines are added as necessary to document any discernible changes in a group or in a target student within a group. Movement of students between groups or the formation of a new group also requires a line.

Each event line records the time an event begins and indicates the group involved. Notations specific to instructors or target students are coded with the group association.

Five major categories are recorded on each event line in RAMOS: TIME, GROUP, INSTRUCTOR, CONTENT, and RESPONSE. Within each category, codes are entered in fields from the RAMOS SUMMARY CODES sheet (Figure 3).

The fields for the TIME category are time an event begins, recorded to the nearest minute on a 24-hour clock, and status, an indication of the focus of the observer at this time.

The GROUP category fields are the ID number indicating to which group the line applies, the number of students in the group, grid or relative position within space, location within room, and density of students in the group.

The INSTRUCTOR category describes the activities of the instructors at a given time by the following fields: instructor ID shows the specific instructor, followed by his classification, the role he is now assuming, his availability to students, how student-instructor interactions are being conducted, and mobility of the instructor.

School_____
Teacher_____

RAMOS EVENT FORM

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A	B	C	D

TIME	STATUS	GROUP					INSTRUCTOR						CONTENT														RESPONSE										SERIAL CODE		
		GROUP I.D.	NUMBER		GRID	LOCATION	DENSITY	INSTRUCTOR I.D.	CLASSIFICATION	ROLE	AVAILABILITY	INTERACTION	MOBILITY	SUBJECT MATTER	READING		MATH		MAIN MATERIAL	SECOND MATERIAL	AIM	ACTIVITY	FEEDBACK		TASK	FOCUS	SOCIAL INTERACT	CONTACT	OUTPUT RATE	PERFORMANCE	ATTEN/INVOLV.	PHYS. ACTIVITY	NOISE	TARGET STUDENT			
														Main Skill	Second Skill	Main Skill	Second Skill					Pattern	Sign															
1 2 3 4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19 20	21 22	23 24	25 26	27	28	29 30	31	32	33 34	35	36	37	38	39	40	41	42	43	44	45	46	47
TIME		GROUP					INSTRUCTOR						CONTENT												RESPONSE										SERIAL CODE		

Figure 2.

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1-4 Time:
24 Hr. clock
0000 Start file
0001 Gener info. line
0002 Group ID line
0003 Instructor ID line
0004 Continuation line
0005 General comment
0006 tm
0080 Field-specific com.
0079 End file

Group

5 Status:
G Group
T Teacher only
P Part of a group
S Specific students
B Background only
N Not being observed

6 Group ID:
from START

7-8 Number in group:
01-99

9 Grid:
code from START

10 Location:
S Students seats
T Table for group work
C Circle grouping
G Game Area
D Desk of teacher
L Library area
B Blackboard
N Not fixed or moving

11 Density:
D Dispersed singly or in twos
S Small groups
C Cluster of majority
W Whole class together

INSTRUCTOR

12 Instructor ID
From Start

13 Classification:
T Teacher
R Resource teacher
N Intern teacher
A aide
V Volunteer
C Crossage tutor

14 Role:
N Instruction
F Facilitation
D Discipline
M Manage class
A Assess/diagnose
E Evaluate for mastery
P Preparation
S Supervise staff
I Independent

15 Availability:
A Available
N Not available
E Emergency
S Specific student
G Group being taught

16 Interaction:
T Instructor chooses
V Volunteers chosen by instructor
H Help sought by students
B Both student and instructor initiate
R Routine of turns

17 Mobility:
M Mobile
L Limited
S Stationary

CONTENT

18 Subject:
R Reading
L Language
M Math
C Science
S Social Studies
A Art/music
B Business of class
F Free choice
W Wait time
P Playtime, recess

19-22 Reading Skills:
DS Decoding, simple
DA Decoding, adv.
SS Structural analysis, simple
SA Structural analysis, adv.
SY Syllabification
WM Word meaning
DW Dictionary work
RA Reading aloud
RS Assign. silent reading
RR Recreational reading
CF Compre. lit facts
CM " main ideas
CR " relations
CE " external. infer.
CS " sequence
CA " apprec.
CC " conclu.
GR Grammar
PU Punctuation
PS Practice spelling
PP Penmanship
WA Assigned writing
WC Creative writing

23-26 Math Skills:
B_ Basic facts
S_ simple
A_ Advanced
F_ Fraction
D_ Decimal
%_ Percent, ratio, preb.
W_ Word problem
_+ Addition
_- Subtraction
_* Multiplication
_/ Division
_R Relationships
RS Set relations
GR Graphing
GE Geometry
ME Measurement
TM Time
$$ Money

27-28 Material:
B Book
C Chart/chalkboard
W Workbook
M Manipulative
P PaperPencil
E Equipment

29-30 Aim:
N_ New
P_ Practice
R_ Review
A_ Application
_C Concept
_S Skill
_F Fact

31 Activity:
L Lecture
D Discussion
S Seatwork
R Recital - reading res
Q Question-answer
A Audio Visual
G Game
V Visual demonstra.

Feedback

32 Pattern:
D Delayed verbal
M Immediate verbal
E Expression
P Physical contact
T Token
W Written

33-34 Feedback Sign:
+_ Positive
-_ Negative
B_ Both
_U Undifferentiated
_T Task specific
_B Both

Group Response

35 Task:
L Listen
S Speak
R Read silently
A Read aloud
W Write
P Physical act

36 Focus:
I Instructor
C Classmates
L Learning material
S Something else

37 Social Interaction:
38 Contact with instructor
39 Output rate
40 Performance
41 Attention/involvement
42 Physical activity
43 Noise

H High
M Medium
L Low
X None

Special codes:
X Stop code
? Uncertain

RAMOS

SUMMARY CODES

R. Calfee & K. Hoover
Stanford, California
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Figure 3.

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The CONTENT category fields include the subject being studied, reading main and second skill, math main and second skill, main and secondary material, aim of instruction, activity used for instruction, feedback pattern of instructor, and feedback sign to student.

The RESPONSE category fields indicate the task assigned to the group of students, the focus of attention of the students, their level of social interaction, output rate, quality of performance, level of attention and involvement, physical activity, and noise level. There is also a column to record a code indicating when a specific target student is referred to by this line.

To illustrate the application of RAMOS to a classroom situation, a scenario has been prepared, together with the RAMOS coding of events. It is given in Appendix B.

The Training of RAMOS Observers

The training of observers in using the RAMOS system was carried out in two stages. The first stage was designed to give prospective observers preliminary experience with the RAMOS concept. The observers studied the RAMOS Manual and sample codings. Then they attempted an observation on an elementary classroom from a school district not in the BTES study. This trial observation was to give the observers an opportunity to gain experience with the instrument so that specific questions of procedure and interpretation could be cleared up. During the second stage, each observer was paired with an experienced observer for several short observational periods, each interspersed with a detailed comparison of codings and discussion for corrective feedback. After this series of trial observations, another information session was held in person, or by telephone, with one of the RAMOS authors. This was a group or individual session as circumstances dictated. Questions were answered and coding conventions clarified. In this last session before actual BTES observations, observers were especially encouraged to jot explanatory notes between coding lines wherever such notes would aid them to check their coding at the end of fast moving situations. These notes were more copious during an observer's early observations, when he was more likely to be uncertain about how to handle unusual situations. These explanatory notes were also used by the editors when the coding sheets were prepared for keypunching.

All RAMOS observers were either trained by one or more of the authors or by an experienced observer who had been trained by one

one or more of the authors. This latter practice was followed in the case of some "replacement" observers in Southern California, who were hired when some of the original observers obtained full-time employment closer to their homes. The replacements underwent the same training as the original observers. All observers were given corrective feedback about every observation. Once the BTES observations began, the observers sent their coding forms to Stanford for review and editing on a weekly basis. When necessary, observations were returned to observers for correction of technical errors. This interchange was a form of continued inservice training as the project went on. Training was not aimed at achieving absolute uniformity of coding--observers differ to some extent in focus of attention, and RAMOS is designed to allow for this variation. Emphasis was on consistent interpretation of codes, on explicitness about focus of attention, and on maximum comprehensiveness in coding--record as many vital events as possible.

One observer served as a coordinator for the Southern California area; one of the authors was the Northern California coordinator. These coordinators were available for consultation during the entire observation period.

Editing and Analysis of RAMOS Protocols

The RAMOS event forms were screened by two readers independently as to appropriateness of the codes. They were keypunched and verified, and then screened by a BMD01D program to check for appropriateness of column codes. Discrepancies were corrected, and then the data were entered into a SPITBOL program written for analysis of RAMOS data as part of work done under a Carnegie Corporation grant to the first author. This program checked further for consistencies in the event forms (e.g., were times in sequential order, were the numbers of students in the various groups adequately accounted for, etc.). If the set of observations during a day for a given teacher met the program standards, then a number of statistics were computed for that observation, and cumulated over the one to five observation sessions for that day.

The basic unit of analysis for the RAMOS protocols is the student minute--a single number minute of student time during a class period. The RAMOS analysis program computed, within each category of the system, the number of student minutes falling within each of the codes assigned to that category. For instance, suppose that, during a given episode, one group of ten students spends 20 minutes reading, 5 minutes in class business; a second group of six students spends 12 minutes in mathematics, 8 minutes in reading and 5 minutes in class business. Then under the SUBJECT category, the distribution of student minutes would be 248 for the Reading code (20 x 10 for the first group, plus 6 x 8 for the record), 72 for the Mathematics code (6 x 12 for the record group), and 80 for the Business code (10 x 5

for the first group, 6 x 5 for the second group). Of the total 400 minutes in the episode, the Reading code has the highest percentage, 62%, followed in second place by Business with 20% and Mathematics with 18%. The analysis program computed the quantities--student minutes and percentage--for each code, and arranged the results in rank order from highest to lowest through rank 7.

The student minute data were forwarded to the ETS office in Princeton, New Jersey where final editing was performed to assure the correctness of codes. The series of observations for each teacher were then combined into a single record for use in the path analysis of the achievement measures. Descriptive statistics for these reduced observational data were also computed for certain subsets of the data. These will be described in the following sections.

The historical record generated by RAMOS contains a great deal of information, and it should be stressed that the summarization of the data by these procedures gives only part of the full picture of the operation of classrooms that might be obtained from the RAMOS data set. The choices have been dictated by the immediate goals of the BTES project, the limits of time and resources, and available methods of analysis.

Analysis of Time Usage by Subject Matter

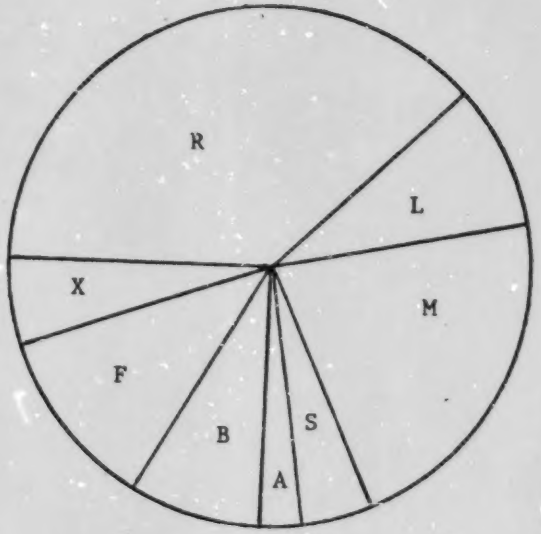
The RAMOS observers were instructed to observe for a period during the day when reading or language arts were being taught, a period when mathematics was being taught, and one or two additional periods when neither of the above was being taught. These instructions were followed, by and large; some exceptions arose because of teachers'

requests that observations be abbreviated or restricted to certain periods of the day, and because of the vagaries of the observers' schedules (the gas shortage occurred while the observations were being collected). For the most part, the observers concentrated their efforts on reading and mathematics--the focal areas of interest in the BTES project.

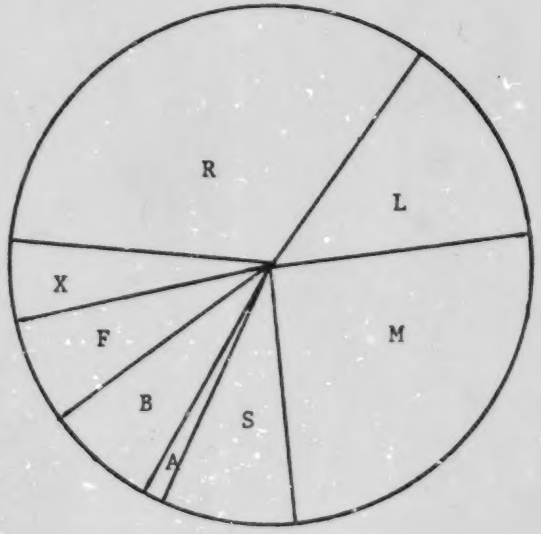
Figure 4 shows the breakdown of subject matters according to time usage in the RAMOS observations. The chart shows the breakdown of the the percentage of student minutes in second and fifth-grade classrooms of the major subject-matter codes. Unsurprisingly, given the observers' instructions, almost three-quarters of the total observational time was spent in reading, language arts, and mathematics, at both grade levels. Relatively small amounts of time were spent in other curriculum areas (science, social studies, art and music); these percentages do not represent the actual distributions over a full school day, but the selection of activities during the day by the observers in response to their instructions. Nonetheless, it is noteworthy that art and music are relatively more common in second grade, whereas science and social studies predominate at fifth grade. This is not a surprising result to anyone who has been in an elementary classroom; it simply suggests that RAMOS did pick up this rather gross feature of time usage at the two grade levels. Class business took about the same amount of time at both grade levels; free time, play time, and wait time occupied about 50% more of the student minutes in second grade than in fifth grade--again, an unsurprising finding.

SUBJECT-MATTER AREA CODES

R Reading
L Language
M Math
S Science/Social Studies
A Art/Music
B Business
F Free/Wait/Play
X Not Applicable or Indeterminate



Second Grade



Fifth Grade

Figure 4. Relative amount of time (in student minutes) falling in various subject-matter areas during RAMOS observations of second and fifth grade classes in BTES sample.

Additional statistics are provided in Table 1 for the breakdown of time usage in the different subject-matter codes. This table gives the proportion of teacher-class units in which the code was observed at least once, the mean percentage of student minutes falling in that code, over all teacher-class units, and the mean student minutes for the subject of teacher-class units in which the code was observed at least once. For example, in grade 2, the subject-matter code "Language" was observed in 70% of the classes. The mean percent of student minutes falling in that code over all classes was 8.7; the mean percent of student minutes falling in that code for only classes in which the code was observed was 12.4.

Table 1

Basic Statistics for Time Usage
in Subject-Matter Category

	Code	% of classes with code observed	Mean % Student Minutes	
			Over all classes	Given code observed
Grade 2	Reading	100	38.4	38.4
	Language	70	8.7	12.4
	Math	98	21.7	22.2
	Science	18	2.9	16.7
	Soc. St.	13	1.3	9.8
	Art/Music	38	2.4	6.3
	Business	85	8.6	10.1
	Free Choice	55	4.6	8.3
	Wait	60	3.3	5.5
	Play	50	3.1	6.2
Grade 5	Reading	96	34.2	35.6
	Language	76	13.6	17.7
	Math	98	25.2	25.7
	Science	16	1.2	7.5
	Soc. St.	41	6.8	16.6
	Art/Music	14	1.4	2.0
	Business	80	6.9	8.6
	Free Choice	31	2.3	7.4
	Wait	67	3.6	5.4
	Play	20	1.0	5.0

It should be mentioned here that each teacher-class was observed on more than one occasion; the actual number of observational occasions was specified by a design described in Volume II of this report. The data in this section are averages over all observational occasions, so we are dealing with a single cumulative observational record for each teacher-class.

Selection of Variables for Statistical Analysis

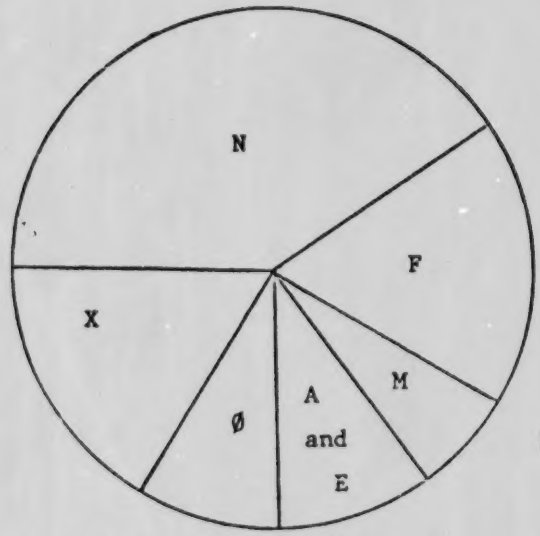
At this point in the reduction and examination of the RAMOS data set, decisions were made as to the selection of variables for more detailed investigation. The primary interest in BTES was to uncover any strong relations of teacher characteristics and practices to student outcomes in reading and mathematics. Accordingly, time usage in the areas of reading (and other closely allied language arts) and mathematics was chosen for analysis. Within these subject matter areas, four major categories were selected: role of the instructor, aim of instruction, instructional activities, and main materials. These categories answer the questions: What was the teacher doing, to what purpose, by what means, and with what resources? These categories were chosen *a priori* as most likely to bear a relation to the overall pupil measures of reading and mathematics.

Role of main instructor. The charts in Figure 5 display the relative distribution of time usage by the target teacher (the "main instructor") in the RAMOS data set. There is a separate chart for reading/language and for mathematics at each grade level. The percentages in each code have been normalized on the total percentage of time falling in the particular subject-matter area.

The most noticeable feature of the charts is the variation of direct instruction and facilitation as a function of grade level and subject

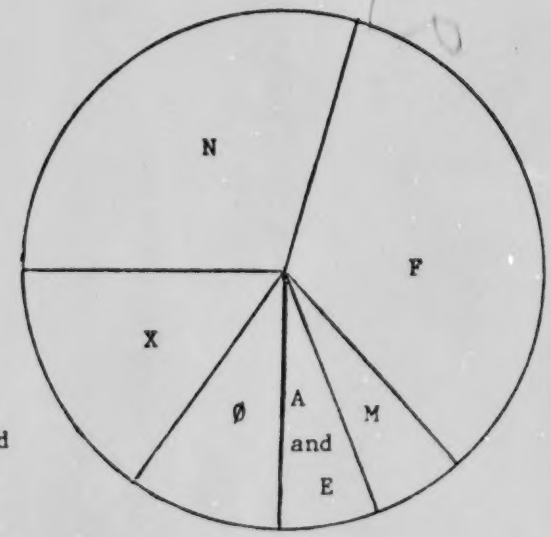
ROLE OF MAIN
INSTRUCTOR CODES

N Direct Instruction
F Facilitation
M Manage Class
A Assess
E Evaluation
Ø Other
X Not Applicable or
Indeterminate

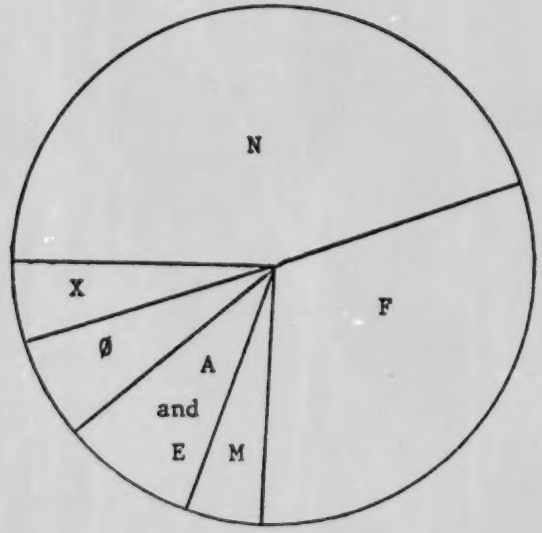


Second Grade

Reading and Language



Fifth Grade



Math

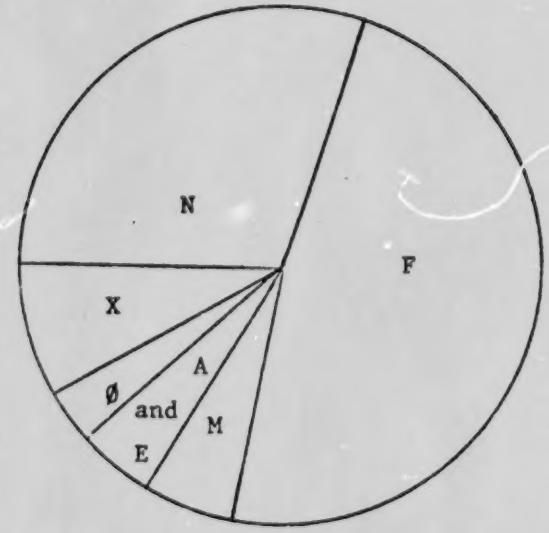


Figure 5. Percentage of total subject-matter time (student minutes) spent in various categories within "Role of Main Instructor".

matter. Direct instruction includes situations in which "the instructor is maintaining direct control over learning activity" (p. 19, RAMOS)*. Facilitation refers to "activities in which the students work independently, but the instructor provides advice and feedback at the student's request or as a result of the instructor's direct observation" (p. 20). The chart reveals that reading and language arts are much more likely to proceed by direct instruction, whereas mathematics is more likely to be under the student's control with the teacher providing help when the student asks for it or when the teacher sees something that requires his attention. It can also be seen that direct instruction is far more common in second grade than fifth grade, in both reading/language arts and in mathematics. Management, evaluation, and other activities occupy about 25 percent of the instructor's time under all conditions. Assessment and evaluation are more likely to take up time in observable ways in second grade than in fifth grade.

The relatively large amount of time not accounted for in second grade reading is due to the fact that instructional aides are more likely to be employed for reading instruction in the lower grades. For a substantial proportion of the student minutes in second grade classrooms, the "Role of main instructor" category is not applicable when reading is being taught, since a secondary instructor is covering those student minutes.

Table 2 presents the primary statistics from which the charts in Figure 5 were derived. The table provides various measures separately, for each grade level and for reading and mathematics. It follows the same general format employed in Table 1. The charts are based on a portion of this information. The tabled statistics provide additional and more precise information. For

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*If not otherwise identified, page references are to the RAMOS manual which is attached as Appendix A.

Table 2

Basic Statistics for Time Usage in Role of Main Instructor Category

	Code	Reading and Language (Total Σ = 47.1)				Mathematics (Total Σ = 21.6)			
		Σ of Classes with code observed	Mean Σ Student Minutes		Σ out of total for subject matter	Σ of Classes with code observed	Mean Σ Student Minutes		Σ out of total for subject matter
			Over all classes	Given code observed			Over all classes	Given code observed	
Grade 2	Instruction	92.5	19.1	20.6	40.5	95.0	9.6	12.0	44.4
	Facilitation	67.5	8.4	12.4	17.7	60.0	6.8	11.4	31.6
	Discipline	27.5	0.9	3.2	1.9	17.5	0.4	2.0	1.6
	Manage	37.5	2.9	7.6	6.1	17.5	1.0	5.6	4.5
	Assess/Diag.	32.5	2.8	8.6	5.9	17.5	1.1	6.4	5.2
	Evaluate	27.5	1.9	6.7	3.9	10.0	.5	5.0	2.3
	Preparation	15.0	1.2	8.0	2.6	12.5	.9	7.2	4.2
	Independent	25.0	1.6	6.3	3.4	5.0	.2	3.0	.7

	Code	Reading and Language (Total Σ = 47.8)				Mathematics (Total Σ = 25.2)			
		Σ of Classes with code observed	Mean Σ Student Minutes		Σ out of total for subject matter	Σ of Classes with code observed	Mean Σ Student Minutes		Σ out of total for subject matter
			Over all classes	Given code observed			Over all classes	Given code observed	
Grade 5	Instruction	86.3	13.9	16.1	29.0	61.8	7.5	12.3	29.7
	Facilitation	88.2	16.2	18.4	33.9	82.4	11.9	14.5	47.4
	Discipline	19.6	.9	4.7	1.9	15.7	.8	4.9	3.0
	Manage	45.1	2.7	5.9	5.6	39.2	1.4	3.5	5.4
	Assess/Diag.	29.4	1.7	5.7	3.5	17.7	.8	4.6	3.2
	Evaluate	17.7	1.3	7.1	2.6	5.9	.5	8.0	1.9
	Preparation	27.5	2.0	7.1	4.1	7.8	.2	2.8	.9
	Independent	33.3	1.8	5.3	3.7	5.9	.1	2.3	.6

instance, a given code within a category might not be used at all during the observation of a classroom; the first entry in each table gives the percentage of classrooms in which the code was observed on at least one occasion. In addition to the average percentage of student minutes over all classes, the average for the subset of classes in which the code was observed at least once is also given. This provides some idea of the distributional characteristics of the measures. Finally, the average percentage student minutes for a code within a subject matter is normalized on the average percentage of student minutes for that subject matter altogether. For example, in Table 2, Instruction was coded under Role during reading on at least one occasion for 92.5% of the grade two classes. On the average, the percentage of student minutes falling within this code was 19.1. Considering only those classes in which the code was observed at least once, the average was 20.6. Reading and language accounted for 47.1% of the total student minutes in grade two, and the average for Instruction, 19.1, was 40.5% of this total.

Aim of instruction. Figure 6 shows the breakdown of time usage by grade and subject-matter for the category of aim of instruction. The dominant aim, accounting for most of the time, is practicing skills, either directly or through review of some sort. Relatively little time was spent on new ideas or topics, and only in fifth grade language arts was any substantial amount of time spent in the application of knowledge, skills or concepts to practical problems beyond a school context. Additional statistics are provided in Table 3.

Instructional activities. Figure 7 gives the distribution of student minutes over codes in the category of instructional activities. Students spent most of their time at seatwork. Fifth graders spent more time in this code than second graders, and the code was observed more frequently in mathematics than in reading. This pattern parallels the variation in facilitation

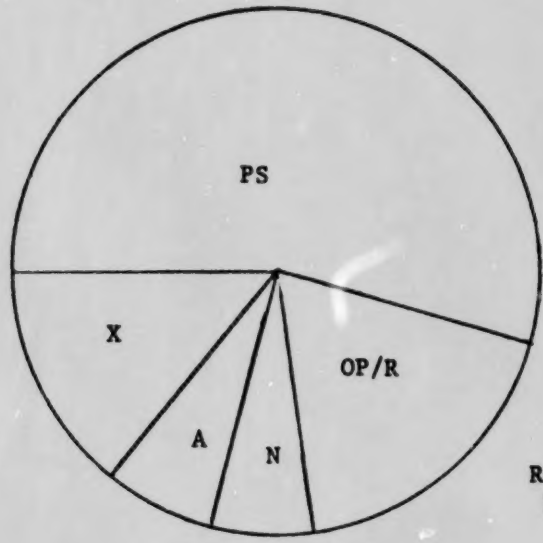
as an instructional role. Discussions and question-answer episodes took up about 20 to 25% of the time. About 10% of the reading time in second grade was spent in oral reading recitation and about the same proportion of the mathematics time was spent in games of some sort. Additional statistics on this category are available in Table 4.

Instructional materials. In Figures 8 and 9 are the distribution of of student minutes over codes for the type of materials used by students in reading and mathematics. The data in Figure 8 are for the primary or main materials; Figure 9 shows the data for materials serving a secondary role. Main instructional materials were those that seemed of chief importance to the activity carried out by the student. If other materials also played a significant role, this was recorded as secondary material. Secondary material reflects the extensiveness of the instructional materials being used at the time in the classroom. It is the difference, in mathematics instruction, between a lesson in a workbook and a lesson in which the student also uses a number scale to check his work; between a reading lesson where the student reads to himself from a book and one in which he records his thoughts and reactions in writing as he reads.

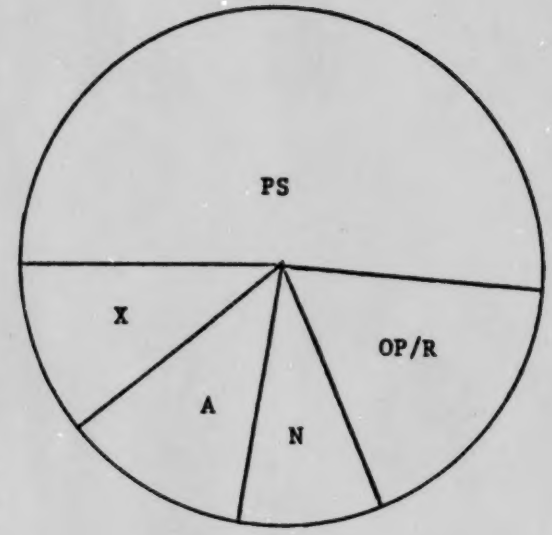
There are large shifts in the pattern of the charts as a function of grade level and subject matter. Books are used more in reading than in mathematics, and more at the later than the earlier grades--an expected result. Workbooks are common everywhere, but especially in second grade mathematics. They also occupy a surprising amount of the time in fifth grade language arts and reading. About 15% to 20% of the time, students are left on their own with paper and pencil. In second grade, students are working with no materials about 20% of the time--it seems likely that much of this time is accounted for by class discussion. Only in second grade mathematics is a considerable amount of time spent with manipulatives

AIM CODES

PS	Practice Skills
OP/R	Other Practice/Review
N	New Ideas
A	Application of Ideas
X	Not Applicable or Indeterminate

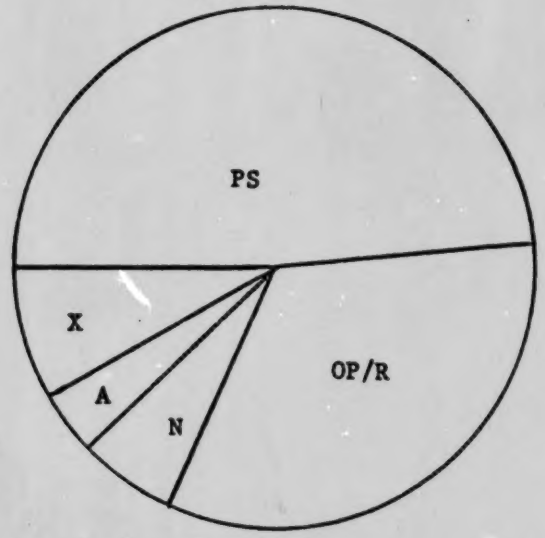


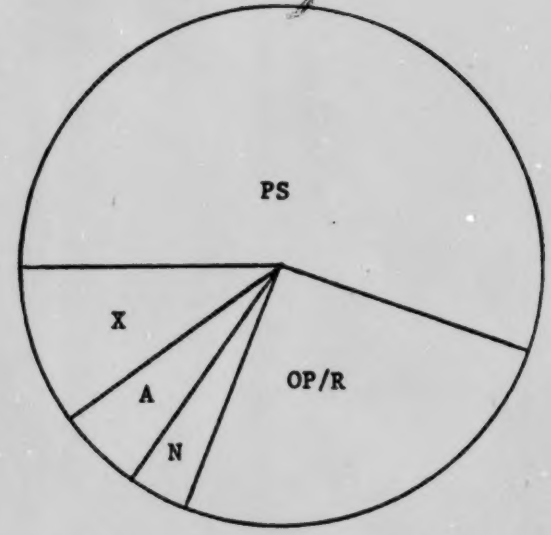
Second Grade



Fifth Grade

Reading and Language





Math

Figure 6. Percentage of total subject-matter time (student minutes) spent in various categories within "Aim".

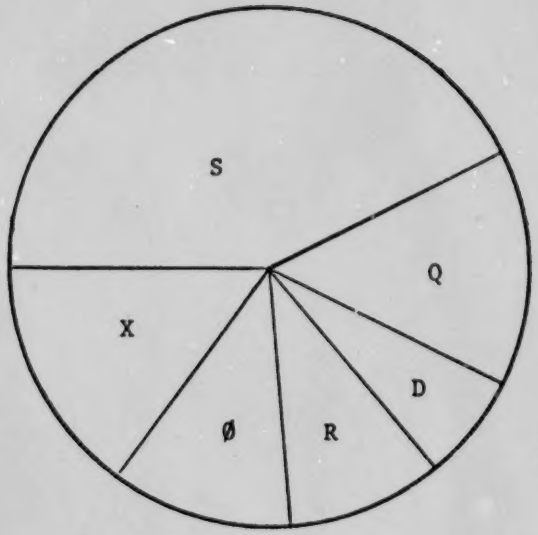
Table 3

Basic Statistics for Time Usage in Aim of Instruction Category

	Code	Reading and Language (Total % = 47.1)				Mathematics (Total % = 21.6)			
		% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter	% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter
			Over all classes	Given code observed			Over all classes	Given code observed	
Grade 2	New Concept	15.0	.9	5.7	1.8	12.5	.7	5.6	3.2
	New Skill	5.0	.9	18.0	1.9	5.0	.3	5.5	1.3
	New Fact	20.0	1.1	5.3	2.2	5.0	.4	7.0	1.6
	Practice Concept	7.5	.2	2.0	.3	15.0	.6	3.7	2.6
	Practice Skill	95.0	25.5	26.8	54.1	77.5	10.5	13.5	48.6
	Practice Fact	30.0	2.0	6.6	4.2	20.0	1.7	8.3	7.6
	Review Concept	17.5	.4	2.1	.8	15.0	.9	5.8	4.1
	Review Skill	30.0	2.4	7.9	5.1	35.0	3.4	9.8	15.8
	Review Fact	37.5	4.2	11.2	8.9	15.0	.6	3.7	2.6
	Appl. Concept	17.5	.8	4.3	1.6	0	0	0	0
	Appl. Skill	30.0	2.1	7.1	4.5	10.0	.7	7.0	3.2
	Appl. Fact	2.5	0.1	5.0	.3	0	0	0	0
	Code	Reading and Language (Total % = 47.8)				Mathematics (Total % = 25.2)			
		% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter	% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter
			Over all classes	Given code observed			Over all classes	Given code observed	
Grade 5	New Concept	11.8	1.9	16.5	4.1	5.9	.2	2.7	.6
	New Skill	7.8	.5	6.0	1.0	3.9	.1	2.5	.4
	New Fact	21.6	1.5	7.1	3.2	9.8	.6	6.4	2.5
	Practice Concept	11.8	.9	7.7	1.9	13.7	1.0	7.1	3.9
	Practice Skill	88.2	24.4	27.7	51.1	84.3	14.0	16.6	55.6
	Practice Fact	27.5	2.1	7.7	4.4	19.6	1.0	4.9	3.8
	Review Concept	17.7	.8	4.3	1.6	11.8	0.4	3.7	1.7
	Review Skill	27.5	2.2	7.9	4.6	37.3	2.6	7.1	10.4
	Review Fact	35.3	2.3	6.6	4.8	17.7	1.4	8.0	5.6
	Appl. Concept	19.6	1.9	9.7	4.0	3.9	.2	4.0	.6
	Appl. Skill	29.4	1.8	6.0	3.7	13.7	.8	5.7	3.1
	Appl. Fact	15.7	1.9	12.2	4.0	3.9	.4	10.0	1.5

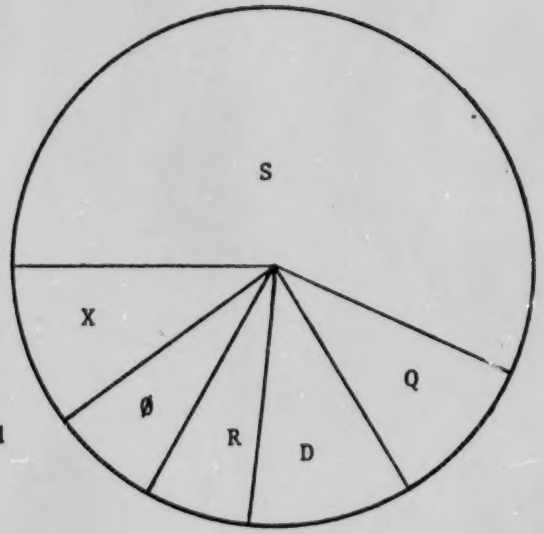
ACTIVITIES CODES

S Seatwork
Q Question/Answer
D Discussion
G Game
R Recital
Ø Other
X Not Applicable or Indeterminate

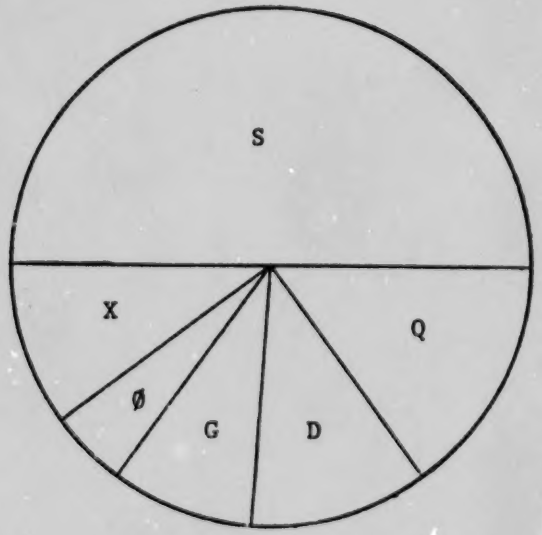


Second Grade

Reading and Language



Fifth Grade



Math

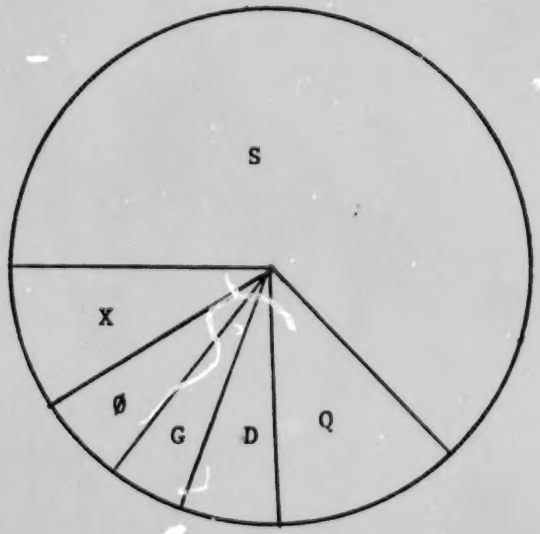


Figure 7. Percentage of total subject-matter time (student minutes) spent in various categories within "Activities".

Table 4

Basic Statistics for Time Usage in Instructional Activity Category

Grade 2

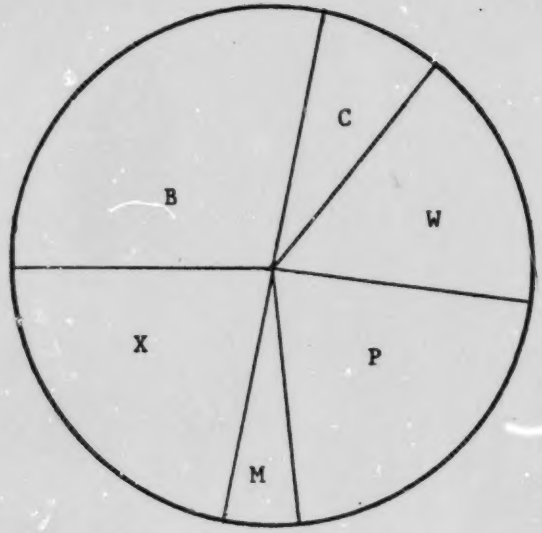
Code	Reading and Language (Total % = 47.1)				Mathematics (Total % = 21.6)			
	% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter	% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter
		Over all classes	Given code observed			Over all classes	Given code observed	
Lecture	25.0	.6	2.5	1.3	0	0	0	0
Discussion	55.0	2.9	5.3	6.2	37.5	2.4	6.3	11.0
Seatwork	90.0	20.0	22.2	42.4	82.5	10.8	13.0	49.8
Recital	50.0	4.3	8.6	9.1	2.5	.1	3.0	.4
Question/Ans.	70.0	7.0	9.9	14.8	45.0	3.2	7.1	14.7
Audio/Visual	12.5	2.7	21.4	5.7	5.0	.3	6.5	1.5
Game	25.0	1.2	4.8	2.6	27.5	1.8	6.4	8.1
Demonstr.	10.0	.8	8.3	1.7	12.5	.7	5.4	3.2

Grade 5

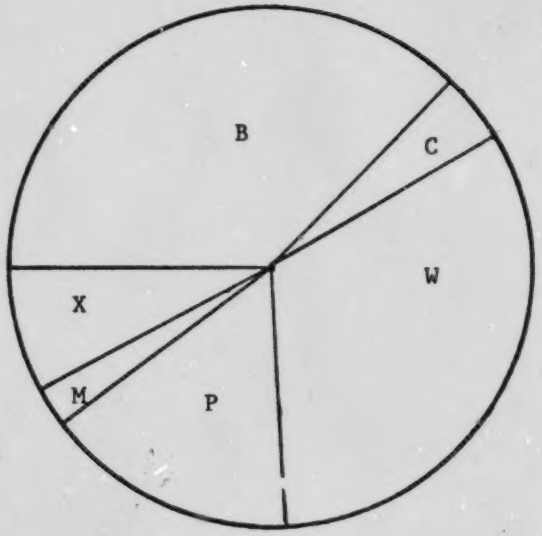
Code	Reading and Language (Total % = 47.8)				Mathematics (Total % = 25.2)			
	% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter	% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter
		Over all classes	Given code observed			Over all classes	Given code observed	
Lecture	23.5	1.9	8.1	4.0	21.6	.8	3.8	3.3
Discussion	56.9	4.9	8.6	10.2	31.4	1.6	5.0	6.2
Seatwork	96.1	27.0	28.1	56.6	92.2	15.7	17.1	62.5
Recital	47.1	2.9	6.2	6.1	0	0	0	0
Question/Ans.	60.8	4.4	7.2	9.1	43.1	2.9	6.7	11.4
Audio/Visual	7.8	.5	5.8	.9	2.0	.1	4.0	.3
Game	9.8	.6	6.4	1.3	19.6	1.1	5.5	4.3
Demonstr.	3.9	.1	2.0	.2	9.8	.5	4.8	1.9

MAIN MATERIAL CODES

B Book
C Chart/Chalkboard
W Workbook
M Manipulative and Equipment
P Paper/Pencil
X Not Applicable or Indeterminate

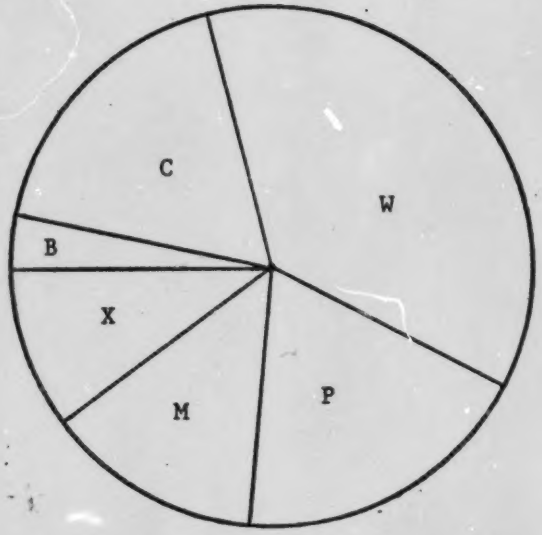


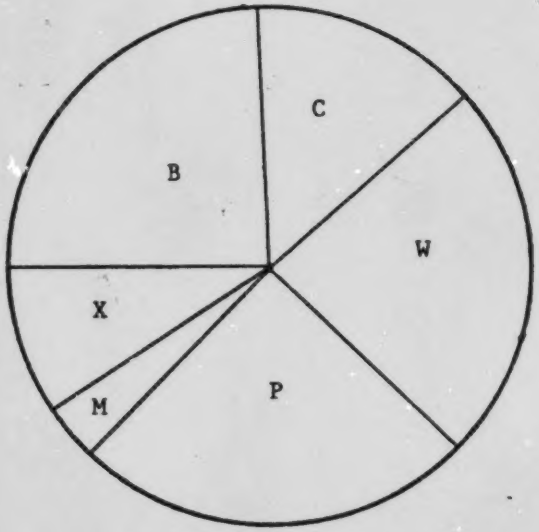
Second Grade



Fifth Grade

Reading and Language



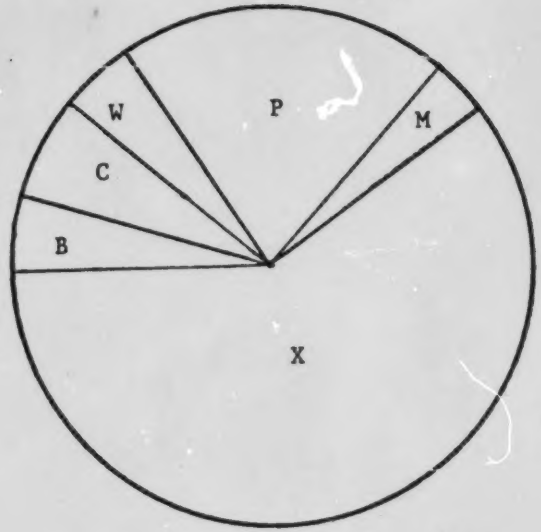


Math

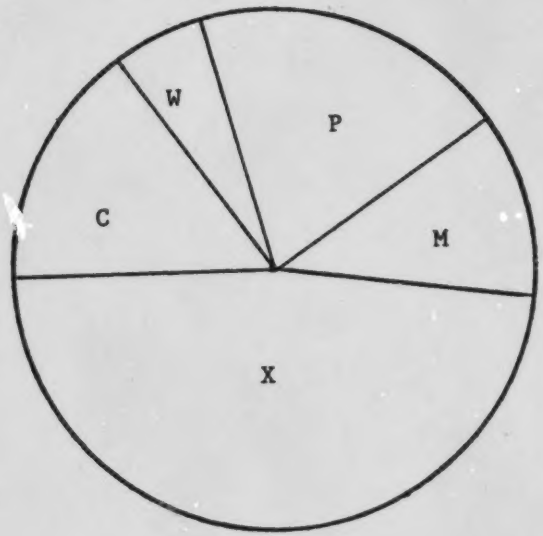
Figure 8. Percentage of total subject-matter time (student minutes) spent in various categories within "Main Material".

SECONDARY MATERIAL CODES

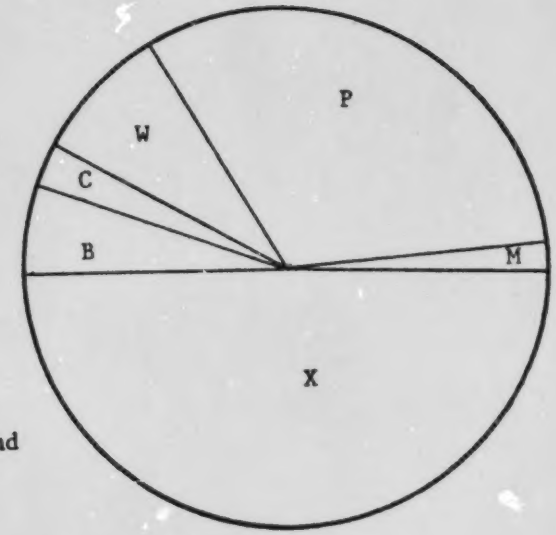
B Book
C Chart/Chalkboard
W Workbook
M Manipulative and Equipment
P Paper/Pencil
X Not Applicable or Indeterminate



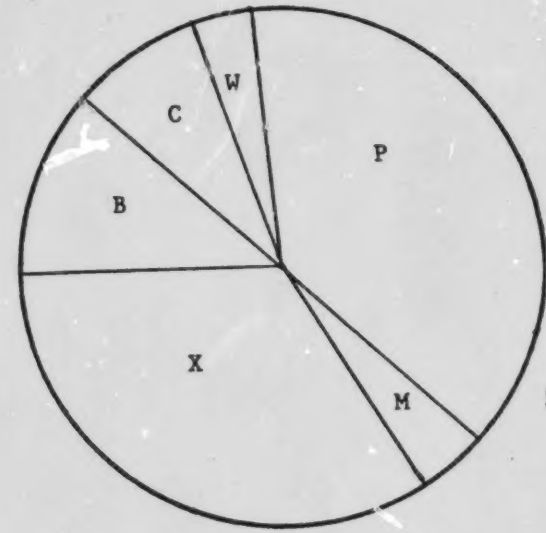
Second Grade



Reading and Language



Fifth Grade



Math

Figure 9. Percentage of total subject-matter time (student minutes) spent in various categories within "Secondary Material".

(Cuisenaire rods, number scales, etc.) or equipment (film strip projectors, tape recorders, etc.). Generally, instruction in these classrooms was carried out with the old standbys--books, paper and pencils, and chalkboard. Additional statistics are available in Tables 5 and 6.

Correlations Among RAMOS Measures

Table 7 presents the correlations among various combinations of the RAMOS variables described above for reading/languages times in second grade classrooms. Codes associated with very low percentage student minutes have been combined in what seems a logical a priori fashion to avoid artifacts due to low variance.

Many of the correlations in the table are low, which suggests a fair degree of independence among the variables (some of the low correlations may result from unreliability of the particular combination of codes, from low variance, or from both). However, some of the correlations are reasonably high. For N=40 cases, the .99 confidence interval about a population correlation of zero is $\pm$ .39, and the .95 confidence interval is $\pm$ .30 (Dixon and Massey, Introduction to Statistical Analysis, 1969, Table A-27).

Two sets of correlations are especially suggestive. One of these contains the correlations among the variables: 2, 7, 8, 9, and 15. This seems to encompass a pattern of direct instruction in which books and workbooks are used by students at their seats for practice and review purposes. The second set contains the correlations between the pairs of variables: 4-5 and 6-10 and 12-14. This pattern appears to represent situations in which teachers are more likely to spend their time in something other than direct instruction. Students are engaged with new concepts and facts with unconventional materials and often in group discussion. To be

Table 5

Basic Statistics for Time Usage in Instructional Material Category (Primary)

Grade 2

Code	Reading and Language (Total % = 47.1)				Mathematics (Total % = 21.6)			
	% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter	% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter
		Over all classes	Given code observed			Over all classes	Given code observed	
Book	92.5	13.4	14.5	28.5	15.0	.8	5.2	3.6
Chalkboard	52.5	3.5	6.7	7.5	47.5	3.8	8.1	17.7
Workbook	67.5	11.4	16.9	24.3	62.5	7.8	12.5	36.2
Manipulative	12.5	.8	6.0	1.6	17.5	1.4	8.0	6.5
Paper/Pencil	72.5	9.9	13.7	21.0	50.0	4.0	8.1	18.6
Equipment	10.0	1.2	12.0	2.6	25.0	1.5	5.9	6.9

Grade 5

Code	Reading and Language (Total % = 47.8)				Mathematics (Total % = 25.2)			
	% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter	% of Classes with code observed	Mean % Student Minutes		% out of total for subject matter
		Over all classes	Given code observed			Over all classes	Given code observed	
Book	84.3	17.6	20.9	36.8	47.1	6.1	13.0	24.2
Chalkboard	27.5	2.0	7.1	4.1	45.1	3.5	7.7	13.9
Workbook	78.4	15.5	19.7	32.3	43.1	5.9	13.8	23.6
Manipulative	7.8	.3	4.3	.7	15.7	.5	3.1	1.9
Paper/Pencil	56.9	7.4	13.0	15.4	58.8	6.3	10.7	25.0
Equipment	19.6	0.9	4.7	1.9	9.8	.4	3.8	1.5

Table 6

Basic Statistics for Time Usage in Instructional Material Category (Secondary)

Grade 2

Code	Reading and Language (Total % = 47.1)				Mathematics (Total % = 21.6)			
	% of Classes with code observed once	Mean % Student Minutes		% out of total for subject matter	% of Classes with code observed once	Mean % Student Minutes		% out of total for subject matter
		Over all classes	Given code observed once			Over all classes	Given code observed once	
Book	40.0	2.2	5.5	4.7	0	0	0	0
Chalkboard	35.0	3.0	8.7	6.4	35.0	3.3	9.4	15.3
Workbook	32.5	2.1	6.3	4.5	27.5	1.2	4.5	5.6
Manipulative	12.5	1.1	8.4	2.3	20.0	1.6	8.1	7.4
Paper/Pencil	72.5	10.0	13.8	21.2	52.5	4.2	8.0	19.4
Equipment	7.5	.3	3.3	.6	12.5	.8	6.2	3.7

Grade 5

Code	Reading and Language (Total % = 47.8)				Mathematics (Total % = 25.2)			
	% of Classes with code observed once	Mean % Student Minutes		% out of total for subject matter	% of Classes with code observed once	Mean % Student Minutes		% out of total for subject matter
		Over all classes	Given code observed once			Over all classes	Given code observed once	
Book	27.5	2.7	9.7	5.6	27.5	2.9	10.4	11.5
Chalkboard	23.5	1.1	4.8	2.3	33.3	2.1	6.4	8.3
Workbook	37.3	3.9	10.4	8.2	17.6	.9	4.9	3.5
Manipulative	2.0	.7	3.7	1.5	9.8	.6	6.4	2.4
Paper/Pencil	80.4	15.3	19.0	32.0	60.8	9.6	15.9	38.1
Equipment	7.8	.4	4.5	.8	7.8	.4	4.5	1.6

Table 7

Correlation Matrix of RAMOS Variables for Second Grade Reading Instruction

Row Variable	Column Variable	1. % time spent as main instructor	2. Instruction, asses. & evaluate	3. Facilitate, discipline, manage	4. Prepare & supervise	5. Independent work by student	6. Aim: New concept & fact	7. Aim: Practice fact & skill	8. Aim: Review concept fact & skill	9. Material: Book, workbook & paper	10. Material: Board & equipment	11. Material (Second.): Book, etc.	12. Material (Second.): Board, etc.	13. Activity: Lecture	14. Activity: Discussion	15. Activity: Seatwork	16. Activity: Recital	17. Activity: Question & answer	18. Activity: Audio-visual	19. Activity: Game	20. Activity: Visual demonstration	21. Teacher effectiveness variable
	1	1.00	0.76	0.40	0.08	0.12	0.11	0.55	0.34	0.70	-0.24	0.25	-0.09	0.05	0.03	0.44	0.15	0.11	0.21	-0.13	-0.33	-0.40
	2		1.00	-0.18	-0.14	-0.17	0.12	0.41	0.47	0.59	-0.17	0.06	0.17	0.00	-0.22	0.33	0.26	0.00	0.46	-0.20	-0.26	-0.29
	3			1.00	-0.15	0.01	-0.21	0.30	-0.11	0.11	-0.05	0.34	-0.33	0.15	0.43	-0.04	-0.07	0.19	-0.27	0.07	-0.06	-0.15
	4				1.00	0.46	0.33	-0.01	-0.17	0.20	-0.15	-0.14	-0.05	-0.10	-0.05	0.41	-0.18	-0.08	-0.09	0.08	-0.08	-0.05
	5					1.00	0.30	-0.08	0.08	0.21	-0.07	0.09	-0.30	-0.07	-0.02	0.41	-0.02	0.06	-0.17	-0.06	-0.14	-0.09
	6						1.00	-0.10	-0.09	0.21	0.45	0.03	0.42	0.02	0.34	0.23	-0.21	-0.10	0.44	-0.04	0.22	-0.13
	7							1.00	-0.13	0.63	-0.30	0.18	0.13	0.16	0.09	0.42	0.23	0.09	-0.09	0:06	-0.28	0.20
	8								1.00	0.37	-0.04	0.06	-0.30	-0.06	-0.20	0.15	0.01	-0.16	0.51	-0.19	-0.05	-0.29
	9									1.00	-0.24	0.27	0.04	-0.17	0.02	0.69	0.13	-0.09	0.35	0.00	-0.17	-0.01
	10										1.00	0.26	0.36	0.14	0.52	-0.32	-0.04	0.08	0.40	-0.09	0.71	-0.02
	11											1.00	0.02	0.05	0.27	0.09	0.43	-0.09	0.06	-0.32	0.07	0.18
	12												1.00	-0.15	0.18	-0.03	-0.03	-0.03	0.31	-0.01	0.35	0.12
	13													1.00	0.19	-0.03	-0.13	0.06	-0.04	-0.02	-0.13	-0.16
	14														1.00	-0.18	-0.22	0.10	0.21	-0.06	0.26	0.00
	15															1.00	-0.11	-0.30	-0.01	0.06	-0.35	-0.06
	16																1.00	0.00	-0.11	-0.17	-0.12	0.23
	17																	1.00	-0.13	-0.10	0.12	-0.10
	18																		1.00	-0.12	0.33	-0.08
	19																			1.00	-0.07	0.01
	20																				1.00	0.23
	21																					1.00

sure, more detailed examination of the data would be needed to confirm the existence of such patterns but they do seem to parallel descriptions of contrastive teaching styles found in contemporary classrooms.

In Table 8 the intercorrelations for reading at grade 5 are presented. The first-mentioned pattern above, involving variables measuring direct instruction, books, and seatwork--all aimed at practice and review--is repeated with some variation in this matrix. Variable 8 (Review) is not part of the pattern, and variable 11 (Secondary material: book, workbook and paper) enters the pattern. These is no evidence of a pattern resembling the second one mentioned for grade 2 reading, which stressed independent work and discussion.

Tables 9 and 10 provide correlations for mathematics in second and fifth grade. Again there is a noticeable pattern tying together variables 7, 8, 9, and 15, this time with variable 3 (Facilitation) rather than 2 (Instruction). Variable 8 is clearly part of this pattern in the grade 2 data, but not in the grade 5 data, where variable 11 appears related to the other measures. In neither case is there any other relation that stands out noticeably in the data.

The correlations of RAMOS variables with pupil achievement test results are given in Tables 11-14. These are partial correlations of RAMOS variables and spring pupil scores controlling for fall scores. Volume IV of this report describes the pupils tests.

Combined Total Category Percentages

For purposes of the structural analysis, it was necessary to reduce the number of RAMOS variables to a relatively small number. For the present report, this was done by adding together the time-usage percentages

Table 8

Correlation Matrix of RAMOS Variables for Fifth Grade Reading Instruction

Row Variable	Column Variable	1. % time spent as main instructor	2. Instruction, asses. & evaluate	3. Facilitate, discipline, manage	4. Prepare & supervise	5. Independent work by student	6. Aim: New concept & fact	7. Aim: Practice fact & skill	8. Aim: Review concept fact & skill	9. Material: Book, workbook & paper	10. Material: Board & equipment	11. Material (Second.): Book, etc.	12. Material (Second.): Board, etc.	13. Activity: Lecture	14. Activity: Discussion	15. Activity: Seatwork	16. Activity: Recital	17. Activity: Question & answer	18. Activity: Audio-visual	19. Activity: Game	20. Activity: Visual demonstration	21. Teacher effectiveness variable
	1	1.00	0.52	0.54	0.20	0.00	-0.07	0.58	0.26	0.70	0.39	0.41	0.01	0.09	0.16	0.55	0.13	0.14	0.06	-0.12	0.25	0.11
	2		1.00	-0.36	-0.25	-0.24	0.00	0.39	-0.03	0.37	0.29	0.03	-0.13	0.07	0.09	0.26	0.44	-0.05	0.25	-0.24	-0.03	0.14
	3			1.00	0.22	0.00	0.01	0.13	0.32	0.40	0.09	0.37	0.15	0.09	0.08	0.29	-0.27	0.20	-0.14	0.08	0.16	0.02
	4				1.00	0.08	-0.17	0.16	0.18	0.11	0.04	0.12	-0.18	-0.11	0.08	0.17	-0.09	0.19	-0.13	-0.08	0.53	0.11
	5					1.00	-0.22	0.26	-0.07	-0.07	0.14	0.13	0.23	-0.14	-0.07	0.10	-0.12	-0.07	-0.13	0.25	0.14	-0.35
	6						1.00	-0.24	0.19	0.01	0.18	-0.06	0.14	0.43	0.10	-0.33	0.00	0.33	-0.09	-0.10	-0.06	0.24
	7							1.00	-0.12	0.63	0.22	0.42	0.04	0.10	0.04	0.61	0.09	-0.08	-0.04	-0.02	0.24	0.00
	8								1.00	0.17	0.35	0.28	-0.13	0.02	0.19	0.06	-0.02	0.46	0.11	-0.16	-0.01	0.06
	9									1.00	0.04	0.50	-0.02	0.10	0.05	0.71	0.17	0.16	-0.06	-0.14	0.27	-0.06
	10										1.00	0.10	0.39	0.43	0.18	-0.06	0.23	0.21	0.10	0.11	-0.06	-0.07
	11											1.00	-0.05	-0.02	0.19	0.48	-0.01	-0.03	-0.15	-0.08	0.12	0.10
	12												1.00	0.37	-0.06	-0.06	-0.02	-0.03	-0.04	0.12	-0.07	-0.27
	13													1.00	-0.03	-0.25	0.18	-0.09	-0.07	-0.09	-0.05	-0.01
	14														1.00	-0.26	0.04	0.01	-0.16	-0.10	-0.11	0.19
	15															1.00	-0.15	-0.02	0.09	-0.17	0.35	0.00
	16																1.00	-0.01	-0.08	-0.04	-0.10	-0.16
	17																	1.00	-0.16	-0.08	0.03	0.00
	18																		1.00	-0.06	-0.03	0.00
	19																			1.00	-0.04	-0.31
	20																				1.00	0.22
	21																					1.00

Table 9

Correlation Matrix of RAMOS Variables for Second Grade Mathematics Instruction

Row Variable	Column Variable	1. % time spent as main instructor	2. Instruction, asses. & evaluate	3. Facilitate, discipline, manage	4. Prepare & supervise	5. Independent work by student	6. Aim: New concept & fact	7. Aim: Practice fact & skill	8. Aim: Review concept fact & skill	9. Material: Book, workbook & paper	10. Material: Board & equipment	11. Material (Second.): Book, etc.	12. Material (Second.): Board, etc.	13. Activity: Lecture	14. Activity: Discussion	15. Activity: Seatwork	16. Activity: Recital	17. Activity: Question & answer	18. Activity: Audio-visual	19. Activity: Game	20. Activity: Visual demonstration	21. Teacher effectiveness variable
1		1.00	0.62	0.60	0.25	0.24	0.10	0.54	0.57	0.69	0.13	0.37	0.40	0.00	0.46	0.61	0.07	0.02	0.02	0.04	0.24	0.18
2			1.00	-0.15	-0.03	-0.20	0.36	0.27	0.30	0.22	0.17	0.20	0.36	0.00	0.56	0.09	0.19	0.16	0.21	0.00	0.01	0.03
3				1.00	-0.04	0.51	-0.21	0.34	0.47	0.56	0.04	0.36	-0.12	0.00	0.09	0.63	-0.11	-0.10	-0.16	0.06	0.13	0.19
4					1.00	-0.05	-0.04	0.27	0.01	0.34	-0.16	-0.15	0.69	0.00	-0.09	0.25	0.04	-0.06	-0.04	-0.08	0.44	0.00
5						1.00	-0.08	0.09	0.09	0.11	0.48	0.37	-0.10	0.00	-0.01	0.21	-0.04	-0.13	-0.04	0.45	-0.09	0.32
6							1.00	-0.07	0.09	0.00	0.31	0.26	0.09	0.00	0.13	0.14	-0.06	0.00	-0.07	0.02	-0.06	-0.15
7								1.00	-0.14	0.72	-0.23	0.30	0.35	0.00	0.25	0.49	-0.22	0.08	0.25	-0.06	0.04	0.18
8									1.00	0.39	0.32	0.19	0.10	0.00	0.04	0.52	0.13	0.00	-0.14	0.05	0.20	0.10
9										1.00	-0.22	0.30	0.33	0.00	0.01	0.82	-0.09	0.07	0.21	-0.15	0.19	0.13
10											1.00	0.41	-0.01	0.00	0.06	0.03	0.20	0.03	-0.16	0.27	0.06	0.28
11												1.00	-0.04	0.00	0.14	0.44	-0.10	-0.17	0.23	0.00	-0.13	-0.05
12													1.00	0.00	0.32	0.23	0.00	-0.02	-0.10	-0.10	0.26	-0.02
13														0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14															1.00	-0.02	-0.08	-0.16	-0.10	-0.02	-0.07	-0.07
15																1.00	-0.19	-0.26	0.07	-0.14	0.30	0.10
16																	1.00	0.41	-0.03	-0.07	-0.06	0.22
17																		1.00	-0.12	-0.13	-0.14	0.13
18																			1.00	-0.08	-0.07	0.22
19																				1.00	-0.16	0.18
20																					1.00	0.08
21																						1.00

Table 10

Correlation Matrix of RAMOS Variables for Fifth Grade Mathematics Instruction

Row Variable		1. % time spent as main instructor	2. Instruction, asses. & evaluate	3. Facilitate, discipline, manage	4. Prepare & supervise	5. Independent work by student	6. Aim: New concept & fact	7. Aim: Practice fact & skill	8. Aim: Review concept fact & skill	9. Material: Book, workbook & paper	10. Material: Board & equipment	11. Material (Second.): Book, etc.	12. Material (Second.): Board, etc.	13. Activity: Lecture	14. Activity: Discussion	15. Activity: Seatwork	16. Activity: Recital	17. Activity: Question & answer	18. Activity: Audio-visual	19. Activity: Game	20. Activity: Visual demonstration	21. Teacher effectiveness variable
	1	1.00	0.45	0.76	0.40	0.00	0.18	0.57	0.29	0.86	0.23	0.59	0.20	0.13	0.26	0.80	0.00	0.25	0.06	0.09	-0.14	-0.14
	2		1.00	-0.21	0.10	-0.15	0.04	0.08	0.12	0.18	0.23	0.04	0.20	0.13	0.07	0.14	0.00	0.34	0.07	-0.12	0.02	-0.01
	3			1.00	0.29	0.06	0.14	0.58	0.20	0.81	0.07	0.63	0.10	0.03	0.25	0.77	0.00	0.02	0.00	0.20	-0.17	-0.13
	4				1.00	-0.09	0.32	0.00	0.44	0.31	0.14	0.10	-0.10	0.19	0.04	0.31	0.00	0.14	0.36	0.03	-0.09	-0.13
	5					1.00	0.02	0.12	-0.06	0.01	0.11	0.06	-0.08	0.04	-0.03	0.03	0.00	0.18	-0.04	-0.02	-0.07	-0.11
	6						1.00	-0.09	0.03	0.00	0.40	-0.01	0.07	0.02	0.39	-0.07	0.00	0.29	0.79	0.07	-0.06	0.02
	7							1.00	-0.36	0.70	-0.06	0.62	0.17	0.04	0.14	0.75	0.00	-0.10	-0.13	-0.10	0.08	-0.30
	8								1.00	0.20	0.37	0.00	-0.01	0.20	-0.07	0.13	0.00	0.26	-0.08	0.37	0.07	0.21
	9									1.00	-0.02	0.70	0.20	0.09	0.18	0.91	0.00	0.10	-0.11	0.07	-0.09	-0.11
	10										1.00	0.19	0.03	-0.07	0.38	-0.08	0.00	0.52	0.31	0.45	0.42	-0.16
	11											1.00	-0.11	-0.04	0.20	0.62	0.00	0.12	-0.06	0.27	0.20	-0.28
	12												1.00	0.13	0.29	0.08	0.00	0.10	0.01	-0.14	-0.05	0.12
	13													1.00	-0.13	0.10	0.00	0.00	-0.06	-0.15	-0.11	0.26
	14														1.00	-0.02	0.00	0.40	0.26	0.00	-0.12	-0.22
	15															1.00	0.00	-0.13	-0.16	0.00	-0.05	-0.16
	16																0.00	0.00	0.00	0.00	0.00	0.00
	17																	1.00	0.18	-0.05	0.01	-0.01
	18																		1.00	0.14	-0.04	-0.23
	19																			1.00	0.16	-0.08
	20																				1.00	0.02
	21																					1.00

Table 11

Partial Correlations of RAMOS Variables and Spring Pupil Scores Controlling for Fall Scores: Reading Grade 2

RAMOS Variables	Pupil Reading Tests				
	CAT Reading	Achievement	Decoding	Application	Total
1. % time spent as main instructor	-.30	-.01	-.27	-.17	-.20
2. Instruction, asses. & evaluation	-.24	.11	-.11	.00	-.11
3. Facilitate, discipline, manage	-.02	-.05	-.15	-.15	.01
4. Prepare & supervise	-.17	-.09	-.17	-.21	-.17
5. Independent work by student	-.04	-.36	-.22	-.16	-.21
6. Aim: New concept & fact	-.08	-.01	.15	.03	.06
7. Aim: Practice fact & skill	-.39	.21	.07	.07	-.06
8. Aim: Review concept fact & skill	-.10	-.33	-.30	-.15	-.23
9. Material: Book, workbook & paper	-.35	-.13	-.14	-.07	-.19
10. Material: Board & equipment	.23	.04	.38	.23	.34
11. Material (Second.): Book, etc.	.26	.24	.28	.43	.48
12. Material (Second.): Board, etc.	.01	-.14	-.01	.06	.05
13. Activity: Lecture	-.08	.09	.02	.07	-.03
14. Activity: Discussion	.20	.27	.11	.11	.28
15. Activity: Seatwork	-.40	-.01	-.24	-.13	-.31
16. Activity: Recital	.18	-.13	.15	.22	.16
17. Activity: Question & answer	-.18	-.18	-.07	-.07	-.11
18. Activity: Audio-visual	-.04	.07	.12	.27	.19
19. Activity: Game	-.20	-.04	.15	-.15	-.19
20. Activity: Visual demonstration	.24	.03	.42	.18	.31

Table 12

Partial Correlations of RAMOS Variables and Spring Pupil Scores Controlling for Fall Scores: Mathematics Grade 2

RAMOS Variables	Pupil Mathematics Tests			
	CAT Concepts	CAT Computation	Application	Total Mathematics
1. % time spent as main instructor	.12	-.15	-.04	-.11
2. Instruction, asses. & evaluation	.20	-.25	-.02	-.17
3. Facilitate, discipline, manage	-.18	.07	-.13	-.06
4. Prepare & supervise	.28	-.01	.21	.19
5. Independent work by student	.04	-.07	.04	-.03
6. Aim: New concept & fact	.01	.22	-.07	.17
7. Aim: Practice fact & skill	-.03	-.41	-.07	-.26
8. Aim: Review concept fact & skill	.18	-.01	-.06	-.02
9. Material: Book, workbook & paper	-.07	-.25	-.07	-.20
10. Material: Board & equipment	.27	-.24	.12	-.08
11. Material (Second.): Book, etc.	-.21	-.28	-.12	-.28
12. Material (Second.): Board, etc.	.25	-.06	.08	.12
13. Activity: Lecture	.00	.00	.00	.00
14. Activity: Discussion	.13	-.13	-.27	-.21
15. Activity: Seatwork	-.07	-.01	.02	-.01
16. Activity: Recital	.15	-.07	.18	.09
17. Activity: Question & answer	.02	-.21	.27	.00
18. Activity: Audio-visual	-.11	-.32	.13	-.15
19. Activity: Game	.18	-.11	-.44	-.12
20. Activity: Visual demonstration	.23	.15	.31	.27

Table 13

Partial Correlations of RAMOS Variables and Spring Pupil Scores Controlling for Fall Scores: Reading Grade 5

RAMOS Variables	Pupil Reading Tests				
	CAT Reading	Achievement	Decoding	Application	Total
1. % time spent as main instructor	-.10	.07	-.02	-.07	.05
2. Instruction, asses. & evaluation	.03	.11	.06	-.12	.14
3. Facilitate, discipline, manage	.04	.01	-.01	.11	.07
4. Prepare & supervise	-.31	.10	-.12	-.08	-.16
5. Independent work by student	-.30	-.26	-.06	-.26	-.35
6. Aim: New concept & fact	.05	-.01	-.16	-.16	-.08
7. Aim: Practice fact & skill	-.22	-.24	-.04	-.19	-.29
8. Aim: Review concept fact & skill	.13	-.11	.11	.19	.09
9. Material: Book, workbook & paper	-.07	-.03	-.25	-.21	-.17
10. Material: Board & equipment	-.13	.01	-.06	-.13	-.06
11. Material (Second.): Book, etc.	-.14	-.10	-.12	-.08	-.08
12. Material (Second.): Board, etc.	.04	-.05	-.42	-.36	-.26
13. Activity: Lecture	-.01	.02	-.01	-.27	-.20
14. Activity: Discussion	.15	.03	-.25	.08	.17
15. Activity: Seatwork	-.23	.00	-.09	-.02	-.06
16. Activity: Recital	.06	-.10	-.01	-.15	-.05
17. Activity: Question & answer	-.01	-.12	-.11	-.03	-.21
18. Activity: Audio-visual	.12	.26	.32	.12	.31
19. Activity: Game	.09	.02	.05	.01	.01
20. Activity: Visual demonstration	-.13	-.01	.01	-.04	-.07

Table 14

Partial Correlations of RAMOS Variables and Spring Pupil Scores Controlling for Fall Scores: Mathematics Grade 5

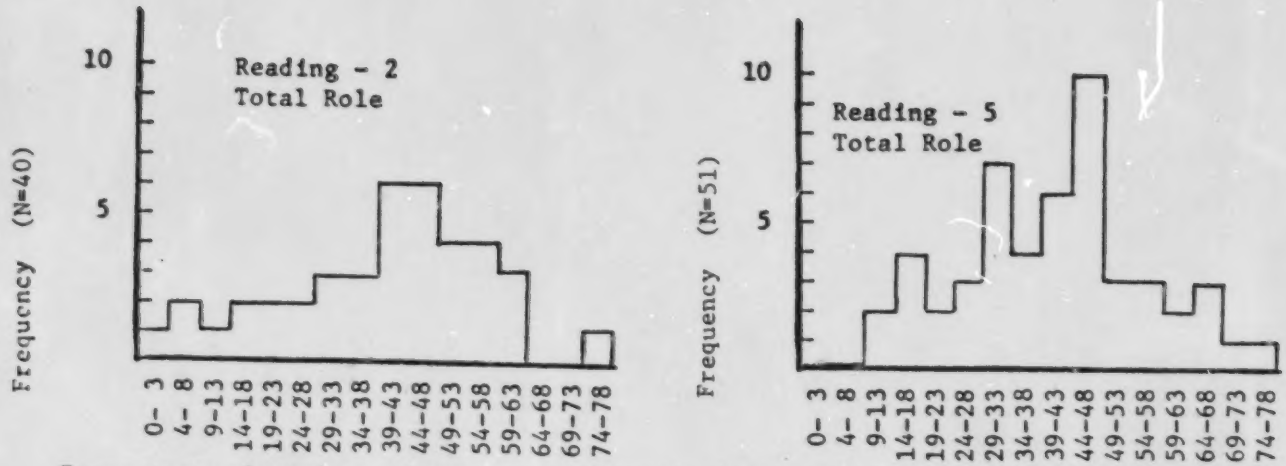
RAMOS Variables	Pupil Mathematics Tests			
	CAT Concepts	CAT Computation	Application	Total Mathematics
1. % time spent as main instructor	.05	-.07	.07	-.00
2. Instruction, asses. & evaluation	.18	.06	.28	.27
3. Facilitate, discipline, manage	-.07	-.14	-.17	-.23
4. Prepare & supervise	-.05	.13	.13	.03
5. Independent work by student	-.20	.07	.14	.07
6. Aim: New concept & fact	.00	.04	.19	.16
7. Aim: Practice fact & skill	-.12	-.26	-.18	-.27
8. Aim: Review concept fact & skill	.10	.18	.34	.26
9. Material: Book, workbook & paper	-.08	-.12	-.00	-.14
10. Material: Board & equipment	.19	.08	.25	.30
11. Material (Second.): Book, etc.	-.12	-.16	-.06	-.18
12. Material (Second.): Board, etc.	.07	-.12	.01	.03
13. Activity: Lecture	.12	-.01	.11	.12
14. Activity: Discussion	-.17	-.23	.03	-.09
15. Activity: Seatwork	-.02	-.03	-.04	-.12
16. Activity: Recital	.00	.00	.00	.00
17. Activity: Question & answer	.05	-.09	.29	.15
18. Activity: Audio-visual	.00	-.02	.03	.04
19. Activity: Game	.21	-.02	-.01	.11
20. Activity: Visual demonstration	.10	-.00	-.10	.01

for all codes within each of the major categories. Thus, one variable was the total time (percentage of student minutes) spent by the main instructor in some kind of instructional role. A second variable was the total time when students were working toward some definable instructional aim. A third variable was the total time that materials of some kind were used, both main and supplementary. A fourth variable was the total time that students were engaged in some discernible activity. The first two variables can logically be expected to be related to each other, as can the last three, but none of the variables are necessarily highly correlated with one another.

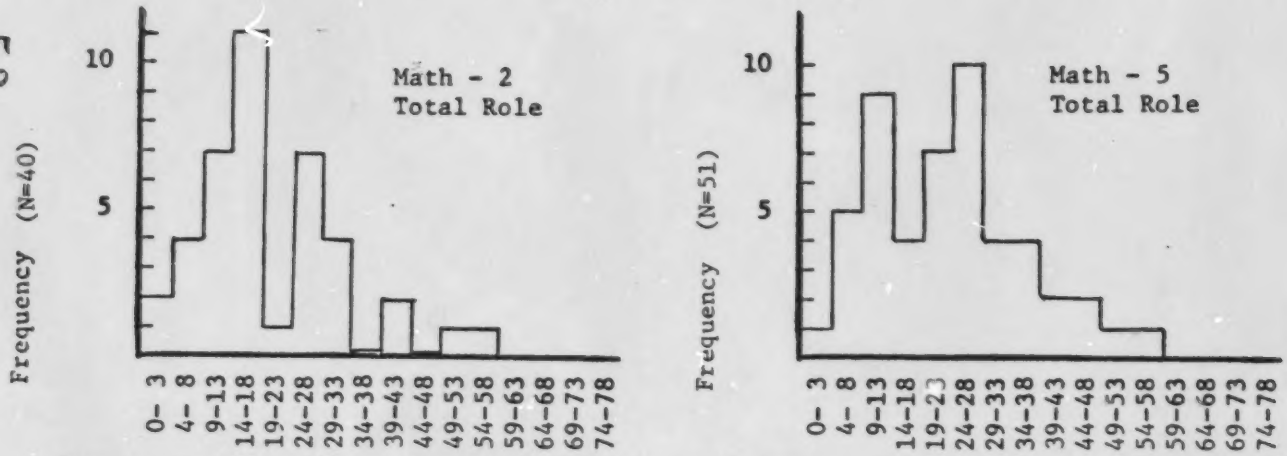
To give the reader some idea of the character of these quantitative measures, distributions for the Role variable are shown in Figure 10 for reading and mathematics at each grade. There is considerable variation in the measure, and while the distribution is not necessarily normal, neither is it as sharply skewed as it might be with a bounded variable like percentage.

Descriptive statistics for the four measures are shown in Table 15, broken down by subject matter and grade. Note that the Materials variable is a combination of both the primary and secondary materials being used at a particular time, and so reflects the richness of the materials being used. However, by adding together what are actually two categories, the score can total more than 100%. In principle it might be as high as 200%, but 120% was the highest value observed.

Correlations between the combined total scores are shown in Table 16 for grade 2 reading data. As seemed likely on an <u>a priori</u> basis, Role and Aim are correlated, as are Material and Activity. However, Activity and Material usage are also related to Aim, though not to Role. The



Percentage of student-minutes spent by main instructor in a role defined by a code other than X.



Percentage of student-minutes spent by main instructor in a role defined by a code other than X.

Figure 10. Histograms showing distributions for Role of Main Instructor Total Time variable.

Table 15

Total Category Percentages as a Function of Subject Matter and Grade: Grade 2, N=40; Grade 5, N=51

Category	Reading				Mathematics			
	Grade 2		Grade 5		Grade 2		Grade 5	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Role of Main Instructor	38.6	34.5	40.6	32.1	20.4	25.8	23.2	25.4
Instructional Aim	36.3	15.8	35.3	17.1	18.1	11.2	20.2	11.0
Material (Main and secondary)	56.9	24.8	66.6	26.9	27.4	17.6	38.1	21.3
Activity	39.5	16.7	42.2	15.1	19.1	10.4	22.6	11.3

Table 16

Correlations Among Total Category Percentages of RAMOS Scores for Grade 2 Reading

		1	2	3	4
Instructional Role	1	--	.59	.18	.18
Instructional Aim	2		--	.52	.45
Materials (Main & Sec.)	3			--	.60
Activity	4				--

Table 17

Correlations Among Total Category Percentages of RAMOS Scores for Grade 5 Reading

		1	2	3	4
Instructional Role	1	--	.42	.59	.56
Instructional Aim	2		--	.58	.53
Materials (Main & Sec.)	3			--	.59
Activity	4				--

Table 18

Correlations Among Total Category Percentages of RAMOS Scores for Grade 2 Mathematics

		1	2	3	4
Instructional Role	1	--	.64	.73	.66
Instructional Aim	2		--	.73	.50
Materials (Main & Sec.)	3			--	.51
Activity	4				--

Table 19

Correlations Among Total Category Percentages of RAMOS Scores for Grade 5 Mathematics

		1	2	3	4
Instructional Role	1	--	.73	.68	.56
Instructional Aim	2		--	.69	.76
Materials (Main & Sec.)	3			--	.74
Activity	4				--

amount of time the main instructor spends in some defined role is related to the time a student spends working toward a defined aim, but is not closely related to the time spent with a well defined material or in a well defined activity. These latter two categories contribute, to a degree independently of the instructor, to the establishment of a clear aim of instruction for a student.

Tables 17 to 19 contain similar correlation matrices for grade 5 reading, and for mathematics at grades 2 and 5. In these tables, all of the variables are fairly closely related, particularly at grade 5.

These are the variables, then, that have been entered into the structural analysis. They summarize a great amount of information, and undoubtedly some useful relationships have been obscured along the way. However, given the thesis that total time usage is one of the more fundamental variables determining instructional effectiveness, the summary variables described in this section represent a reasonable choice for initial stages of hypotheses generation.

Modification of RAMOS for Future Use

As with any modification on first use of an instrument, there were features of the RAMOS that could use simplifications, additions, and deletions. Most of the revisions would have to do with systems for handling group formation and movement of students or instructors between groups. Some modifications of observer training procedures and the schedule of observations would also be useful.

Changes in training procedures should emphasize thorough instruction or verification and editing of the raw observational forms for keypunching. There would still be a need for a final verification of legitimacy of coding and plausibility of event line, but much additional editing time could be saved if observers were trained in editing procedures.

The scheduling of observations needs close control to assure that the actual observations reflect a representative sample over time. Bunching of observation days and shortened time samples within a day should be avoided if at all possible.

The START FORM can remain essentially the same. However, a notation of the total number of children in the class at the beginning of the observation period is deemed essential.

A different procedure for indicating the formation of a new group on the EVENT FORM would make the Group Information section more of an overview and summary section. Addition of a time column for this summary of actual observed groupings would be a good cross check for verification of data on the EVENT FORM.

The changes recommended in the EVENT FORM all concern formation of new groups and movement of students and instructors between groups. Since RAMOS is a system of observation, modifications of the content of the observations should vary according to the needs of the project using the instrument. The procedures are the heart of the system.

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APPENDIX A

RAMOS Manual

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READING AND MATHEMATICS OBSERVATION SYSTEM

R.A.M.O.S.

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READING AND MATHEMATICS OBSERVATION SYSTEM

I N T R O D U C T I O N

The Reading and Mathematics Observation System, RAMOS, is designed for real time documentation of what happens during classroom instruction in reading and mathematics at the elementary level. It is a modification of a system presently in use as part of a basic research project on reading acquisition under the direction of the first author. This modification was designed to meet the needs of the California Beginning Teacher Evaluation Study for widescale observation in second and fifth grade classrooms, with emphasis on selected skills in reading and mathematics.

RAMOS is designed primarily for observation of reading, language arts, and mathematics, and reading- or mathematics-related activities. The observer can record the activities of an instructor working with the class as a whole, an instructor working with a specific group of students within the class, or a group of students working independently. In addition, the observer can also obtain selected data on as many as four target students in a group.

The system provides a great deal of information about the detailed character of instruction in reading and mathematics. The basic measurements, for purposes of the Beginning Teacher Evaluation Study, are (1) total time spent on activities directly or indirectly related to reading and mathematics, (2) the character and variety of those activities, and (3) the relative distribution of time spent in activities.

The first step of the system is the completion of the START FORM. Before the observation period begins, the observer records basic information such as the date and time, a situational description, and physical characteristics of the classroom. Then the entry levels for the following variables are

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INTRODUCTION

recorded:

Who are the students being observed?

How many are these in the group? Where are they located in the room? Which target students, if any, are in the group?

Who are the adults in the classroom?

How many adults are there? Where are they, and with what student groups are they associated?

After the START FORM is completed, the observer begins to record events as they occur on the EVENT FORM. An event is any occurence in the group that produces a discernible change lasting as long as half a minute in any observational category. An event may comprise a relatively complex situation. A teacher directing a small group of children in oral reading could be recorded as a single event lasting for several minutes, as long as there was no discernible change over the reading period in activity, the character of the feedback, or student performance. However, suppose the teacher began with a lecture on the main ideas in the story that was about to be read, then led the group in a discussion of new vocabulary, next asked the children to begin reading aloud in turn, and finally spent a minute or two disciplining two children who had started an argument. Each of these developments would be recorded as an event.

The EVENT FORM provides answers to the following questions about activities in the classroom:

What is going on at any given time?

What is each student group and adult doing? If engaged in an instructional activity, how many students and adults are involved, and where are they?

Who is doing the instructing?

What is the nature of the instructor (teacher, aide, volunteer, tutor, etc.)?

What role is the instructor playing (direct instruction, discipline, class management, etc.)?

INTRODUCTION

What is the content of instruction?

What subject matter is being taught?

What skills and activities are involved?

What materials are being used?

What kinds of feedback are available to the students?

What is the response of the group to instruction?

What kinds of responses are required or expected of the students?

What is the judged level of attention to instruction? Relative adequacy of performance? Amount of social interaction between students?

The record of an event includes the time, followed by entries in one or more of the following observational categories: GROUP, INSTRUCTOR, CONTENT, and RESPONSE. These categories are described in more detail in a later section. A category entry is made only if there has been a change in that category. Suppose a teacher was using the same set of materials during a reading period, and the students remained reasonably involved for the whole time, but the teacher switched from one skill to another several times during the period: the main idea, appreciation of the art work in the story, discussion of selected words exhibiting a particular letter-sound correspondence, silent reading of the passage, and finally oral reading by selected students. The observer would record the initial conditions of instruction, and subsequently note the changes in type of skill or activity as they occurred in time. The actual number of recorded entries would be quite modest, since the GROUP, INSTRUCTOR, and RESPONSE categories would remain constant and hence would not require any new entries after the initial ones.

Letters and numbers are used as codes in RAMOS. Most of the codes are mnemonic, based on the initial letter; for instance, R stands for Reading, M for Math, and A for Art/Music in the Subject Matter field. Occasionally, the second letter of a classification is used when the first letter is already used, as in S for Social Studies but C for Science. The two letters I and O are never used as codes to avoid confusion with 1 and 0 (zero).

START FORM

The START FORM is designed to describe the classroom at the start of the period of observation. Cells are provided for recording general information, information on groups of students, and information on any instructors in the classroom. A grid is provided for sketching the room layout.

The observer should begin by sketching the layout of the room. The room can be located on the grid in any convenient fashion. Furniture, work areas, and any other pertinent paraphenalia should be included in the sketch. It would also be useful to include a rough estimate of the dimensions of the room. Note the location of any groups of students, and the location of any adults. If it is possible, the groups and adults should be identified by an appropriate I.D. number, and the number of students in each group should also be noted.

The general information cell should now be filled out. Except for comments, record only one character per column, to make it easier for keypunching. DATE should follow the convention of month, day and year, using numeric codes but not inserting a slash. For instance, January 15, 1974 would be written 011574. OBSERV. is the observer's name or some portion thereof. The serial code is a three column code. The first column should have the observer's initial (or I.D. code if that is different from his initial). The second and third columns should have a two-digit number assigned to this particular observation. The easiest way to identify specific observations is probably for the observer to keep a running tally on how many observations he has done. For instance, Observer C might be on his 16th observation, in which case his serial code would be C16. Time in and time out are four-digit numbers based on the 24-hour clock. The 24-hour clock will be used for all time entries in RAMOS, and observers should try to familiarize themselves with this notation. Times from midnight to noon are described in the usual way except that twelve is

omitted for times between midnight and one o'clock in the morning. Times from noon until midnight are written by adding the appropriate hour to 12. For instance, 1:15 p.m. becomes 1315. No separator such as a colon or slash is necessary. The comments under general information can describe any particular aspects of this particular observation that seem pertinent. Comments may be written in free hand. There are no limitations on comment lines as to placement of information in a given column, nor are there any limits to the length of the comments. In the comments, the observer should note the intended focus of the observation. This focus will usually be either the instructor, a group of target children, some other adult, or classroom activities in general.

GROUP INFORMATION

The group information cell serves for preliminary identification of the groups of students in the classroom. When beginning an observation, it is advisable to mentally organize the students in the classroom into as small a number of groups as possible. Some idea of the group structure can usually be gotten while the room layout is being sketched. A group is a collection of students who are engaged in a similar activity. The size of the group can range from as few as two students to as many as the entire classroom. Generally a group's members will be in close proximity to each other. However, this will not always be the case; a group might consist of several students spread quite widely apart, or even interspersed among other groups. For example, several students spread throughout the classroom might be working on mathematics while the rest of the students are doing art projects. These two collections of students, who are doing different things would be described as two different groups.

The Location code should include all segments on the grid in which the group is located. There are two special location codes: W, the entire class area, is used if students are spread out over a large portion of the classroom. Y denotes a collection of students outside the classroom but within the observer's

field of observation.

Instructor (Inst.) refers to adults who are directly interacting with a group. If there are no such persons, then the instructor code should be marked with an X to show that the field is not active.

Subject (Subj.) refers to any subject matter activities that appear to be central to a group's work. A group may appear to be engaged in more than a single subject matter or may be engaged in none. General impressions about subject matter will suffice for completing the START FORM.

Number (Num.) refers to the number of students in the group. This entry should be as accurate as possible, and the total of the entries in this column should equal the number of students in the classroom.

Target student is used to identify any target students who are in a particular group. No codes have been prepared for these categories yet, but it is intended that this field be used to identify special characteristics of the target students. The comments field can be used to note any particular matters related to the groups as structured. For instance, if the classroom is highly individualized, with no apparent group structure, and with pupil mobility, an appropriate description might be written in the comments.

Reading curriculum and Math curriculum refer to any standard texts or other curriculum materials being used by the group at the start of the observation. For instance, if the Harper Row, Ginn 360, or Open Court reading series is being used by a group of students, this would be noted in this field.

INSTRUCTOR INFORMATION

The instructor cell is used to identify all adults in the classroom. Instructor includes the nominal teacher, any other certificated personnel, parent volunteers, aides (both adult and student), and any other adults. If you do not know the name of an instructor at the start of the observation, make an identifying remark in the field to the right that will allow you to identify

the person later. For instance, "man with orange shirt and purple necktie" might serve as identifying features of a particular individual. When the observation is completed, you can then ask the teacher or some other person for this person's name.

Group is used to record any student groups with which this instructor appears to be associated at the beginning of the observation period.

Subject (Subj.) is used to record any subject matter areas that the instructor is working on with the group.

Location is used to record one or more of the parts of the grid being covered by an instructor. If the instructor is stationary, then a single grid location should be recorded.

Comments can be used to note any special features of the classroom activity more or less related to the instructor. This is a good place to note such things as the general character of the classroom. For instance, a typical comment in this field might be "lots of plants, student artwork very colorful; no materials center, relatively few books or other academic materials; games available at several locations for students who finish early." More detailed information of a general character will be collected during the summary and debriefing phases of the observation, so the comments here should be kept as brief as possible.

COMPLETING THE START FORM

It will take a while to fill in the START FORM, but this information is important, and you should review it for accuracy and completeness before moving to the EVENT FORM. Try to finish this job as quickly as possible, so that the recording of actual events can begin.

EVENT FORM

The RAMOS EVENT FORM is the core of the RAMOS system. As noted earlier, an event is any discernible change in any category of observation. What is perceived as an event will depend on a number of factors, such as the amount of activity in the classroom, the location of the observer in the classroom, the observer's intention and expertise, among others. In many situations, the observer may have to keep most of the students in the background in order to concentrate his attention on a small number of students, on a teacher, or on an instructional aide. The number of events recorded will depend on the rate at which the changes are taking place, and, to some degree, on the observer's facility in using the recording sheet. In general, however, the observer's goal should be to record any event which constitutes a discernible change from the previous state of affairs. The changed situation should normally last at least a half minute to be considered an event. However, the impetus for a change might be of very brief duration -- a teacher might rap on the desk for attention, and thereby produce a lasting change. Such an event should be coded if possible. A change may be gradual rather than abrupt, so that the observer may not be aware of the change immediately. For example, a group of students might become gradually noisier until the observer is finally aware of the upward shift of the noise level in the classroom. At such time as the observer becomes aware of the change, it should be recorded, even though it may have come about slowly.

The EVENT FORM is used in two stages, as follows:

STAGE ONE - As soon as the START FORM is completed, the observer should turn to the EVENT FORM and record the initial status of each group being observed on a separate line. If there are three groups, for example, the first three lines on the EVENT FORM should provide a complete description of the initial status for the three groups. This initial description may

require some time to complete, but it is essential to record fully the state of affairs existing at the beginning of the observation. The observational categories will be described at length in following pages.

After these initial lines have been completed, the current time should be entered for all groups. For instance, suppose an observer enters a classroom in which there are two functional groups, at 11:40 a.m. By the time the START FORM and the first two lines on the EVENT FORM are completed, ten minutes probably have elapsed. Then the time entered on the two lines that provide an overall description of the two groups on the EVENT FORM would be 1150 (11:50 a.m.).

STAGE TWO - Once the initial lines have been completed, any further entries recorded after that time only have to provide information about any specific fields that have changed. For instance, if the observer notices a change in the attention level of the students in a particular group, but all other facets of the classroom have remained constant, then a Time and Group I.D. would be entered on the next line together with the appropriate change in the Attention field. No other fields would require an entry on that line. The Serial Code only has to be filled in once, on the top line of a given sheet.

When the EVENT FORM is being initialized, the observer may also want to jot down some notes in the cells labeled A, B, C, and D at the top of the EVENT FORM as a way of identifying target children. For instance, student A might be described as "blond boy with green shirt and brown pants."

EVENT CATEGORIES

Five major Categories of information need to be considered in recording an event in RAMOS: TIME, GROUP, INSTRUCTOR, CONTENT, and RESPONSE. Within each category, there are a number of specific fields in which codes are entered. Three fields are always required for each line. The TIME of an event, noted to the nearest minute on a 24-hour clock, must always be recorded. The Status field in the TIME category is also obligatory. This code indicates whether the event is in the focus of the observer's attention, or is a peripheral observation. It also designates whether an event concerns a teacher or student or group of students. The Group I.D. field in the GROUP category must also be filled in. This code identifies which group an event line applies to.

The third category, INSTRUCTOR, describes the activities of one or more of the adults in the classroom. The fourth category, CONTENT, is the heart of the RAMOS system. Here is recorded any activities directly related to reading or math, as well as a description of the aim of these activities and the type of feedback being provided to students. The final category, RESPONSE, is a record of what students are doing during an event. Some ratings in this category are fairly objective, while others rely on the observer's judgment.

The following sections of the manual provide detailed guidelines for coding these five major categories on the EVENT FORM.

TIME

TIME is recorded to the nearest minute on a 24-hour clock. Each event is a discernible change lasting (or causing lasting effects) for more than thirty seconds.

Code

00XX COMMENT LINE - The time columns are also used for special codes and comments. It is assumed that all observations are conducted between 7 a.m. (0700) and 4 p.m. (1600). The numbers 0000 to 0005 and 0099 are reserved for special codes that are described in another section. Time codes from 0006 to 0080 are used to identify comments specific to particular fields on the EVENT FORM. For instance, 0015 would mean that the information on that line was a comment about the Availability field.

The observer may record anecdotal information (in prose) at any point during an observation in the form of a comment line. The information may be written out in longhand. There is no need to observe the usual column assignments and, if necessary, a comment may extend over several lines. If the comment is completely general in character, the time code should be 0005. If the comment refers to a particular field, then the column number of that field should be entered in the time column. In the case of fields that extend over two columns, the first column number should be recorded. In situations where changes are occuring very rapidly, the observer may jot down brief comments, leave some blank event lines and fill these in later with the appropriate information. In this case, any redundant comments should be deleted when the appropriate codes are filled out. In general, an observer should enter as comments any information that seems a useful supplement to the coding system. However, an accurate record of events as they occur has first priority, and supplementary comments should be recorded only as time allows.

EVENT FORM - TIME

Here is a summary of special TIME codes:

0000	Start a file
0001	General information line from START FORM
0002	Group ID line from START FORM
0003	Instructor ID line from START FORM
0004	Continuation
0005	General comment
0006 to 0080	Field specific comments
0099	End a file

STATUS

This field specifies the focus of the observer at the time an event is recorded. The intended focus of the observer is specified on the START FORM, but circumstances within the classroom may change the focus from time to time. Any such changes must be recorded in this column.

CODES

G — GROUP. A group is the major focus of the observation. This is often the group with the most direct contact with the target teacher. A focal group may contain more than one target child. Unless the observer is primarily concerned with the target child, the G code will be applicable even though the observer may be taking note of the target child. If the entire class comprises a single group, and the class as a whole is the focus of the observer, then the G code will also be used.

T — TEACHER ONLY. The instructor in the Instructor I.D. field is the focus of attention. This code would be appropriate when the main purpose of the observation is recording the teacher's activities, and when the response of the student group is relatively incidental. The code would also be appropriate when the teacher is acting as a facilitator for an entire class or is engaged in some other role which precluded direct contact with students--such as preparing materials, or conferencing with individual students and/or other adults--if the observer were trying to document these activities.

EVENT FORM - STATUS

CODES

P PART OF GROUP. The focus is on a part of the previously described focal group (G) which has been temporarily called together for a specific purpose. When this code is used on an event line, a continuation code (0004) is used rather than a time code. The time is therefore the same as the group of which it is a part. This group code is recorded on the immediately preceding line (i.e.

0953	G	1 etc.
0004	P	etc.).

S SPECIFIC STUDENT. The focus is on a specific student, who might or might not be a member of a group. When this code is used on an event line, a continuation code (C004) is used in the time field when a target student is a part of a group and differs from the rest in one or more categories. This continuation line must immediately follow an event line for the group of the target student. The target code of the specific student must be given in the Target Student field in the RESPONSE category, following the methods described under Special Procedures which follows later in this paper.

B BACKGROUND ONLY. The event is a peripheral background observation, describing discernible changes in one or more groups that are not the focal point of the observation. Background events should be noted as time allows, especially if they have some bearing on the activities of the focus groups.

N NOT BEING OBSERVED. A group which has been previously identified is no longer being observed. This code might be used if a group moves out of the observational range, either by leaving the classroom, or by some other way becoming unavailable to the observer. For instance, an aide might take a group of students to a corner of a large classroom for a special activity, and the observer would be unable to see what was happening.

M MOVEMENT BETWEEN GROUPS. This is a special situation in which the movement of children from one group to another is handled according to the procedure outlined later in this manual (page 42).

G R O U P

The fields in this category include the Group I.D., the Area, type of Location, and Density factors for each group of students. Most of this information is recorded on the START FORM, and should change relatively seldom in many classrooms.

GROUP I.D.

Each group is identified by an arabic number. As many as four different groups can be identified on the START FORM. Additional groups can be identified as necessary on the EVENT FORM by using the Special Time code 0002, and the format from the START FORM. A maximum of nine unique groups can be identified in any one observation. The Group I.D. from the START FORM should be used to designate a group throughout an observational period unless the group's structure changes. Procedures for coding such changes will be described under Special Procedures.

Most observers will find it difficult to keep track of more than two or three different groups at any one time, and so observers should avoid too detailed an analysis of the group structure. In special circumstances, a group might consist of as few as two or three children, but generally a group will consist of five or more children engaged in related activities. In the case of a class that is completely individualized, and assuming that every child is actually doing something quite different than any other child, the students should be considered as a single group, widely dispersed and working on diverse content. Groups may be denoted on the basis of spatial contiguity, similar activities, or contact with a single instructor. If one or two individual children are isolated from their group for reasons of special interests or discipline, it will usually be convenient to include them in the larger group and to record any special features of their situation only if they are target students.

EVENT FORM - GROUP

NUMBER

A two-column field is used to indicate the number of students in a particular group. Unless there is considerable movement in the classroom, this entry should remain fairly stable over time, at the level indicated on the START FORM. If one or more children leave a group temporarily, there is no need to record this as an event. Transfers from one group to another, the establishment of new groups from old groups, and entries or exits from the classroom are handled by Special Procedures described later.

GRID

This field designates the position of a group in the classroom. The code should be taken from the Location Grid on the START FORM, using a single letter which identifies the center of the group. Unless there is considerable movement of groups within the classroom, this field should remain constant from the START FORM. Changes in this field should be recorded only if there are major and lasting movements in the classroom.

LOCATION

This code is used to identify the functional nature of the area in which a group of students is located. Unless the group moves, or unless new furniture or equipment is brought into an area, this code should not change during an observation.

CODES

S STUDENT SEATS. Students' seats, desks, or individual tables, when they are in the usual location of this furniture. The code is not used to describe an area into which students have moved their chairs so they can sit at a fixed work table. Nor would it be used to describe an area into which chairs have been moved to form a circle for story reading.

T TABLE FOR GROUP WORK. A work table area designed for group activities. This might include tables designed for reading instruction, art projects, cooperative projects, and the like.

EVENT FORM - GROUP

CODES

C CIRCLE GROUPING. An area in which groups of three or more students gather for purposes of instruction or discussion. It might be formed by chairs, or pillows. The purpose of such an area is to allow a relatively small group of students to focus on a single instructor or on a student presenting information.

G GAME AREA. An area in which students can play games or use manipulative materials. It may be a table or an area on the floor, but is clearly designated as a separate area in which game-like activities can be conducted.

D DESK OF TEACHER. Teacher's desk or work area denoted by the teacher as primarily under his/her control. It may be a place where students receive individual help, assessment, corrective feedback, new assignments and so on.

L LIBRARY AREA. An area containing instructional materials and equipment. This includes all tables or areas set aside for independent reading, assigned or recreational. Listening to music or stories on headphones, and other reading-related activities may also take place in this area.

N NOT FIXED. A free area in which no fixed functional properties of the location are observable.

DENSITY

This field is used to describe the relative placement of students throughout the classroom. It is used to describe how students are distributed within the space available and is not used to describe the absolute density of students as such. It does not matter whether there are a lot of students in a small classroom or a few students in a large classroom. The question is how students within a classroom are using the available space.

D DISPERSED SINGLEY OR IN TWOS. Students are dispersed singley or in pairs; for instance, at individual seats or desks or at tables with space for two students. The students are not otherwise grouped or organized in larger units.

EVENT FORM - GROUP

CODES

S SMALL GROUPS. Students are organized into sets of three or more students working in close proximity to each other. Students within a set may or may not be working on the same material, but are physically near each other. A group might consist of several sets of this sort; any single set might include as many as half of the students in the class.

C CLUSTER OF MAJORITY. A cluster of students comprising more than half of the class gathered together in relatively close proximity. This might be used to describe a situation in which most of the students are seated around the teacher receiving direct instruction while a minority of the class is in another location doing something else.

W WHOLE CLASS TOGETHER. The whole class is together for a single overall purpose. If fewer than three children are isolated from the whole class for whatever reason, this code would still be used. Only if more than three children are separated from the whole class for some clearly discernible purpose would the C code be used.

EVENT FORM

I N S T R U C T O R

An instructor is any person whose activities in the classroom are intended to communicate knowledge. This definition excludes visitors, observers, school personnel, and others who might enter the room for noninstructional purposes. An instructor does not have to be an adult, although this will usually be the case. Neither does he/she have to be working directly with the students. A cross-age tutor, a person correcting written work or preparing instructional materials, or a principal who came into the room for an instructional purpose such as assisting the teacher or disciplining a student would all be classified as an Instructor.

Every instructor in the classroom at the beginning of the observation period should be identified by an identification code on the START FORM. Generally, it will not be possible to keep a complete record of the activities of all the instructors in the room if several are present. The observer should decide which instructors, if any, are to be the focus of the observation, and make a detailed record of the activities of these selected instructors. If the actions of an instructor, or any other person, result in a discernible event in the group being observed, this should be recorded when possible. Instructors who enter the room during the observation should be identified and entered on the START FORM as soon as is convenient.

The INSTRUCTOR category includes fields for the Instructor I.D., the Classification of the instructor, the Role of the instructor during an event, the Availability of the instructor to the students in the class, the general character of the Interaction between instructor and students, and the Mobility of the instructor around the classroom space.

INSTRUCTOR I.D.

Each instructor is identified by a one-digit arabic numeral on the START FORM. Up to three different instructors can be described on the START FORM.

EVENT FORM - INSTRUCTOR

If there are more than three instructors, additional entries can be made on the EVENT FORM using special time code 0003, following the format on the START FORM. If no instructor is working with a group, or an instructor leaves a group, the Instructor I.D. should be coded X.

CLASSIFICATION

This code identifies the background and training of an instructor. If this information is not available at the start of instruction, the observer should request it at the end of instruction.

CODES

T — TEACHER. A certificated teacher who is regularly assigned to the class or to the classroom. More than one teacher may be assigned to the class, for example, in a team-taught classroom.

R — RESOURCE TEACHER. A certificated teacher who performs specialized functions in a classroom. The area of specialization could include reading, mathematics, psychology, art, music, etc.

N — INTERN TEACHER. Student teachers and other individuals undergoing supervised training as teachers.

A — AIDE. A paraprofessional who is regularly assigned to a classroom to assist the teacher.

V — VOLUNTEER. An individual, such as a parent or older student, who is not regularly assigned to a classroom, but comes voluntarily on a regular or an irregular schedule.

C — CROSS-AGE STUDENT TUTOR. Another student from another class in the same school, older (usually) or younger who assists in instructional activities.

ROLE

This code describes the function of an instructor in a classroom.

N — INSTRUCTION. The instructor is involved in direct instruction. The code applies to activities in which the instructor is maintaining direct control

CODES

over learning activity. Direct instruction does not include introduction to an instructional activity, situations where students are working independently with occasional support from the instructor, nor the preparation of instructional materials. Examples of direct instruction might include student recitation under the direct supervision of a teacher, and a situation where a teacher shows a student how to follow instructions in a math workbook. It should also be used for a teacher-led activity where the instructional purpose is not clear, but no other category (e.g. discipline or assessment) is appropriate.

F FACILITATION. Activities in which the students work independently, but the instructor provides advice and feedback at the student's request or as a result of the instructor's direct observation.

D DISCIPLINE. The instructor's primary activity is to prevent a child (or children) from initiating or continuing undesirable activities. The code should be used only when undesired behavior has occurred or appears imminent; it does not apply to a general discussion of misconduct.

M MANAGEMENT OF CLASS. Activities intended to organize the class for some purpose. This code would be used for instructions, for transitional activities, for class meetings, and any discussion or presentation of organizational practices for class work.

A ASSESSMENT/DIAGNOSIS. Formal or informal testing of the knowledge or skills of the students, individually or as a group, so that instruction can be properly prescribed.

E EVALUATION FOR MASTERY. Formal or informal testing of individuals or groups to determine the level of competence or mastery. This category is differentiated from the assessment/diagnosis code, in that the purpose is not for planning instruction, but instead is designed to determine the child's level of knowledge or competence. Most mandated testing, such as standardized achievement testing for program purposes, would be included in this category.

EVENT FORM - INSTRUCTOR

CODES

The information would generally not be used in any instructional decisions at the classroom level, but would be of interest to the district, the school, or parents. The code also applies when the instruction is used to determine if the student's or class's performance meets the teacher's expectations.

P PREPARATION. Activities involving planning lessons, collecting and organizing instructional materials, for immediate or future use. The instructor has minimal interaction with the class, unless students are assisting with that preparation.

S SUPERVISION OF STAFF. A situation where the instructor directs, trains, or observes another instructor, aide, or tutor.

T INDEPENDENT. Students are working independently, with negligible support from any instructor.

AVAILABILITY

This category describes the degree of availability of an instructor to one or more students.

A AVAILABLE. Students have access to the instructor for help or redirection. The instructor may or may not be engaged in direct instruction but is attentive to any student's efforts to gain notice. If an instructor is available to the students in the whole class, but then becomes involved with one student's problem for more than a half minute, the A code should be changed to S (below). However, if the instructor is circulating freely, giving brief attention to one student and then another, the A code should be maintained.

G GROUP BEING TAUGHT. The instructor's attentions are focused on a specific group (consisting of less than half of the total class), and it is reasonably clear to the rest of the class that the instructor will not respond to requests for attention from outside this group.

S SPECIFIC STUDENT. The instructor's attention is directed toward a single student, and it is reasonably clear that the instructor will not attend to others.

EVENT FORM - INSTRUCTOR

CODES

E EMERGENCY. The instructor has previously discouraged student-initiated interaction, but has been forced to attend to a problem. The observer might switch from the G or S code to E when the instructor must quiet another group or the entire class, stop a fight between two students, or attend to the needs of another student who is unable to continue a project without assistance.

N NOT AVAILABLE. Situations in which the instructor makes clear to the class, through explicit verbal instructions that the students are to work completely independently. This code also refers to times when the instructor is out of the room, occupied with something not related to the class, or engaged in conversation with other adults/instructors in the room.

INTERACTION

The codes in this field describe control processes in the interactions between students and instructors. This is a complex category and will require subjective evaluation by the observer. The interactions may change rapidly in many classrooms, and the observer should attempt to record only the most obvious or prevalent interaction.

T INSTRUCTOR CHOOSES. The instructor maintains direct control, determining who will talk and when.

V VOLUNTEERS CHOSEN BY INSTRUCTOR. Requests are made by the instructor for volunteers to engage in some interactive activity.

H HELP SOUGHT BY STUDENTS. The student initiates interchange, either because the instructor is specifically available to students, or the student requests attention or clarification.

B BOTH INSTRUCTOR AND STUDENT INITIATE. Discussions in which interaction is dependent on both instructor and students.

R ROUTINE OF TURNS. The students appear to have learned a routine which determines the order of interaction, rather than direct control by the instructor, as in reading or reciting in turn.

EVENT FORM - INSTRUCTOR

CODES

X NO INTERACTION. Generally applies when students are working independently, or are listening but not responding.

MOBILITY

This category describes the degree to which an instructor is moving about the classroom area.

M MOBILE. The teacher ranges freely around the classroom area.

L LIMITED. The teacher moves about, but within a restricted area of the classroom.

S STATIONARY. The teacher is seated, or stands in one location most of the time. This code will be used if the instructor is basically in a fixed position but moves occasionally to a table, chalkboard, or some other location to obtain materials or make a brief presentation.

CONTENT

The fields in this category include Subject Matter, Reading or Mathematics Skills, Materials in Use, Intention (Aim) of Instruction, Type of Instructional Activity, and Pattern and Sign of Feedback.

SUBJECT MATTER

The subject matter field characterizes the nominal curriculum at the time of observation. As such, the breakdown into categories follows conventional curriculum division. While the major concern of the RAMOS system is planned reading and mathematics, it can be used to observe spontaneous reading and math instruction occuring during other specified subject matter insturction.

Codes

R — READING. Any activity that is described to a student group as reading by the instructor. The activity may be explicit instruction in reading skills, vocabulary development, recreational reading, or reading exercises (such as articles in the Weekly Reader).

L — LANGUAGE ARTS. Dramatics, creative writing, and grammar are examples of this area. If it is not possible to distinguish between reading and language arts, code L should be used. General discussion of literature and writing should also be labeled L rather than R.

M — MATHEMATICS. Any activity that is described by the instructor as math or arithmetic to a student group, including computational and conceptual math.

C — SCIENCE. Practical as well as "textbook" science. For example, demonstrations and discussions of field trips would be included under this general category.

S — SOCIAL STUDIES. Textbook exercises, general discussions of values, ethics, and related events of historical as well as current significance.

A — ART and MUSIC. This includes both applied and theoretical art and music, as well as art and music appreciation.

EVENT FORM - CONTENT

Codes

B CLASS BUSINESS. Activities related to the general management of the class. For example, if students or the instructor are involved in collecting milk money, or planning a Halloween party, or cleaning desks after an art project, code B is appropriate. Discussions of task-specific problems should be included under the appropriate subject matter heading. For instance, if the class is organizing itself to work on a science project, or to do some language arts activities, these events would be coded as C and L, respectively. Sometimes the distinction may become fuzzy. For instance, a discussion of how to assist some students who are having difficulty in reading, or who are working out an art project might be best described as class business, depending on the character of the conversation. When uncertain, a comment is probably in order.

F FREE CHOICE Activities. Situations where students are either explicitly given time to do as they wish, or when a target student or the majority of students in a group finish an assigned task early and have time to use as they wish. Free choice is distinguished from play time in that students in free choice are expected to engage in some activity approved of or provided by the teacher.

W WAIT TIME. A situation in which students are unable to use time freely, and are waiting for other students to finish, for the teacher to finish preparations, or for any other reason cannot use time productively.

P PLAYTIME, RECESS or other RECREATIONAL PERIOD. Any time defined by the instructor as falling in one of these categories.

READING SKILLS

The codes in this field are designed to provide a relatively detailed account of activities that are directly or indirectly related to the development of reading acquisition skills. Reading codes consist of two letters that describe word attack and comprehension skills (e.g. DS: Decoding, Simple), in addition to writing (e.g. WC: Creative Writing, grammar, and several language skills.

EVENT FORM - CONTENT

Codes

DS DECODING, SIMPLE. Letter-sound correspondence rules involving regular consonants, consonant clusters, consonant blends, and single vowels, whether long or short. Instruction may be based on phonics principles, blending, analysis of word wounds, rhymes, or word patterns.

DA DECODING, ADVANCED. Letter-sound correspondence rules of a more complicated nature including vowel diagraphs, "r", "l", and "w", effects on vowels, "silent" consonants, and correspondences that are related to syllabification.

SS STRUCTURAL ANALYSIS, SIMPLE. Pronunciation and understanding of multi-unit words that include a root and a grammatical ending (plural, past tense, -ing) plus contractions and simple compound words.

SA STRUCTURAL ANALYSIS, ADVANCED. Analysis of more advanced structural units, including nongrammatical pre-fixes and suffixes and analysis of common semantic roots (e.g., know, unknown, reknown, acknowledge).

SY SYLLABIFICATION. Analysis of the syllabic structure of multi-syllabic words, including stress patterns, rules for breaking complex words into syllabic units, special letter-sound correspondences (e.g. -tial, -tion) and rules related to vowel shifts in polysyllabic words. If uncertain about instruction in polysyllabic words, use SY rather than DA.

WM WORD MEANING. Activities related to vocabulary development, including specific definition or words, definition or words by context, analysis of conceptual relationships between words, and familiarization with "new" words prior to oral reading.

DW DICTIONARY WORK. Training in alphabetizing, use of picture dictionaries in beginning reading, and training in the use of pronunciation codes in dictionaries.

RA READING ALOUD. Oral or recitative reading by an individual student to the teacher or to some other individual in the classroom, either singly or as part of the reading group. This includes reading single words, phrases, sentences, basic readers, and poems.

EVENT FORM - CONTENT

Codes

RS READING, SILENT, ASSIGNED. An individual or group of students is asked to read a designated passage to themselves, usually as part of an assignment designed to increase reading speed and comprehension. Silent reading often occurs in connection with seatwork, workbook activities, or immediate assessment of comprehension.

RR READING, RECREATIONAL. Students are specifically given time to select and read material of their own choice, and with no implied assessment or workbook activity after the reading. This may include occasions when students are directed to choose from a number of activities, one of which is reading. If students are expected to prepare report or answer questions after free-choice reading, this should be coded as RS.

CF COMPREHENSION-FACTS, LITERAL. Development of skills in locating specific information in a text, or in other kinds of written material. If possible, the observer should determine that the facts can be located in the text, and that the students are not being asked to reflect on their own experience or to generate factual answers as part of a problem-solving exercise. This code applies when the answer to a question can be located within the written material available to the students.

CR COMPREHENSION, RELATIONS. Instruction on how to detect and use relatively simple relations in written material, including similarities and differences, cause-effect relations, general-to-specific relations, and relations involving comparisons. All of the information needed to establish the relations should be available within the text materials.

CM COMPREHENSION, MAIN IDEA. Learning to synthesize and/or tie together the major elements in a passage, to describe the main theme or give the main idea. The ability to create or to choose the right title for a story, or to identify the major characters, are two skills included in this category. CF, CR, and CM

EVENT FORM - CONTENT

Codes define a continuum ranging from instruction in comprehension of the simplest facts in a passage to synthesis of the most general sort.

CS COMPREHENSION, SEQUENCE. How to recognize the order in which events have occurred in a story, with some understanding of why one thing leads to another. This category is akin to CR, but should be applied when a story line is especially important and instruction focuses on the plot structure of a story as opposed to simpler cause-effect relationships embedded in the passage.

CE COMPREHENSION, EXTERNAL INFERENCE. How to bring "common knowledge" information to bear on a story so that things that students are generally aware of can be used to interpret the meaning of a story. This category should be used whenever comprehension-type instruction relies on information not included in the text.

CA COMPREHENSION, APPRECIATION. Development of the ability to relate story content to the reader's own personal experiences and knowledge, the ability to enjoy humor or other emotional aspects of the story, and to appreciate the characterizations used by an author.

CC COMPREHENSION, CONCLUSIONS. The development of the ability of a reader to generate opinions, form hypothese about the logical outcomes or implications of a story, and to evaluate the consistency of a story, the characters, and the coherence of a plot.

GR GRAMMAR. All skills commonly referred to as grammar other than those referred to in previous categories, including usage of tense, sentence structure, proper use of singulars and plurals and other grammatical forms. Form-class usage and parsing would also be included in this category.

PU PUNCTUATION. Usage of conventional punctuation marks and capitalization rules.

PS PRACTICE, SPELLING. Types of instruction include the following: spelling bees, spelling workbooks, dictation copying and any other activities aimed at improving correct spelling. If this instruction includes any components bearing

Codes

directly on decoding skills, then the appropriate coding categories (DS or DA) should be given priority.

PP PRACTICE, PENMANSHIP. Practice in correct forming of printed and cursive words, including practice writing and practice at copying forms.

WA WRITING, ASSIGNED. Assignments in which the child is instructed to write in response to specific questions or specific reading, such as answers to questions or "book reports".

WC WRITING, CREATIVE. Any activity in which the student is encouraged to express his own thoughts, ideas, and imagination in written form (e.g. stories, poems, essays). The assignment generally requires no previous reading.

MATH SKILLS

In this field are codes for all work that has direct or indirect relationship to development of mathematics and arithmatic skills, both computational and conceptual. Mathematics skills are defined by a two-column code, similar to reading skills. Some of the codes are described below as initial or final letters. For instance, B, S, A, F, D, and W are single letters that are used in initial position to describe the general character of an instructional activity, while +, -, *, /, R, and % are single letters that are used in final position to describe the specific mathematical operations included in an activity. All combinations of these initial and final letter codes are possible. For instance, B+ would refer to instruction in basic facts (B) in addition (+). The observer should be alert for the occurence of mathematics instruction during science and any other subject matter classes.

B_ BASIC FACTS. Addition and multiplication tables, and any other fundamental factual information taught by rote. The emphasis is generally on rote memorization, rather than on understanding or computation. Flash card practice would generally be described by this category.

EVENT FORM - CONTENT

Codes

S_ SIMPLE. Instruction in simple computational skills, requiring no regrouping or carrying. This includes all computations that can be carried out as a series of one-step operations, with no remainders, carries, or regrouping.

A_ ADVANCED. Practice at computations in which regrouping, carrying and other secondary operations are required.

F_ FRACTION. This includes computation with fractional values of any sort. (It is unlikely that mixed fractions or least common denominators will arise in any of the classrooms now being studied. But if advanced fraction problems of this sort are being studied, a special comment should be used to note this, otherwise, it will be assumed that the fractions are simple.)

D_ DECIMAL. Instruction in the understanding and use of decimal values.

%_ PERCENTAGE, RATIOS, and PROBABILITIES. Instruction in the development of these skills. Includes direct computation as well as understanding.

W_ WORD PROBLEMS. Instruction or practice in how to read a word problem in math, and how to formulate the appropriate mathematical equation.

?_ If it is not possible to decide from the observation which of the above codes is most descriptive of an activity, the question mark should be used.

_+ ADDITION. The major computational component involved addition.

_- SUBTRACTION. The major computational activity involves subtraction.

_* MULTIPLICATION. The major computational activity is multiplication.

_/ DIVISION. The major computational activity is division.

_R RELATIONS. Emphasis is on the conceptual understanding of a mathematical problem or computational procedure, and the actual computation activity is minimal.

_? If the content of a mathematical activity cannot be described adequately by one of the categories above, a question mark should be used.

* * *

The following codes apply when understanding of a specific concept plays the major role in the instruction or activity, and computation is secondary or absent.

EVENT FORM - CONTENT

Codes

RS RELATIONSHIPS, SET. Instructional activities concerned with set theory or general number relations. No distinction needs to be made as to the exact character of such instruction (e.g. complements, correspondences). This category should also be used to code number theory. If properties of direct relevance to computational skills are being taught, for example, the associative and commutative properties which apply to addition and multiplication, then the R category described earlier should be used.

GR GRAPHING. Relations are represented by visual graphs (e.g. pie graphs).

GE GEOMETRY. Description of simple figures such as triangles, and squares as well as Euclidean geometry. This includes activities which discuss spatial relations, and description of geometric forms by angles and line segments.

ME MEASUREMENT. Instruction in common measurement systems, with the exception of time and money. This includes length, area, volume, weight, and training in the terminology (pints, grams, meters) as well as use of measurement principles.

TM TIME. Practice in use of time systems including clocks, calendars, and addition and subtraction of time units.

$$ MONEY. All instruction in the U.S. monetary system including terminology (pennies, nickels, dimes), addition, subtraction and so forth. The appropriate operation and content category should be used to describe situations in which addition, subtraction, etc. are relatively more important than measurement.

MATERIAL

Codes Materials and equipment used in connection with instructional activities are coded in this field. In addition to the standard materials (books and work sheets), audio-visual equipment and games should be indicated. A column is provided for main material and second material.

B BOOK. Basic textbooks as well as any other books.

C CHART/CHALKBOARD. Charts, chalkboards (hand-held or stationary), flannel boards, or wall displays.

EVENT FORM - CONTENT

Codes

W WORKBOOK. State-adopted workbooks, other workbooks, dittoed handouts, and any other printed material in which the child works on assigned material.

M MANIPULATIVE. Cames, cusenaire rods, and all other materials a child manipulates physically. Number scales, letter tiles, and anything else that is directly handled by the child is included in this code.

P PAPER/PENCIL. Instances where the child is given writing material to use except for those covered under workbooks. This includes blank paper, pencils, felt marking pens, crayons, etc.

E EQUIPMENT. All items used for demonstration rather than being directly manipulated. Tape recorders, record players, audio-visual equipment, and computer terminals are included under this code.

AIM

This field is used to represent the primary purpose of the instructional activities, as perceived by the observer. Determining the proper code for this category requires that the observer make use of whatever cues that are available in the classroom. A conversation with the instructor before or after the observation will often be of some help. This is a two-letter field. The initial letter designates whether new material is being introduced, as opposed to skill practice or review, or application to a practical situation. The second letter designates the level of instruction, ranging from general concepts to specific facts.

Codes

N_ NEW. The material or ideas are largely new to the students. If the new material is introduced by a reference to previously taught material, then N code would still be used.

P_ PRACTICE. The student works through an example of previously introduced materials, or engages in other activities designed to promote mastery.

R_ REVIEW. Previously introduced and practiced materials are presented briefly for the purposes of assessment. This category would not be used if there is intensive practice on the material.

Codes

A_ APPLICATION. Previously introduced ideas or skills are applied in a practical situation. The context should have some clear real life reference, as opposed to strictly classroom-oriented activities. This might include using a dictionary to look up words from a newspaper article, using reading skills to figure out the instructions on how to assemble a toy, or applying computation skills in purchasing groceries.

_C CONCEPT. The main focus is on the conceptual basis of a subject matter area. It includes teaching principles, rules, and other general or abstract relations.

_S SKILL. Activities in which the emphasis is on simply using a skill rather than understanding or knowing. For instance, carrying out addition or subtraction computations would be included here. Rote memorization of the number table would be coded as F (below).

_F FACT. The emphasis is on acquiring basic knowledge or a relatively simple sort. Examples include learning the addition and multiplication tables, learning simple letter-sound relations, or learning the geographic characteristics of a state, a country, etc.

ACTIVITY

This field describes the situation by which instruction is conducted. Generally, the instructor will have a major role in determining what kind of activity or pattern of activities exist in a classroom.

L LECTURE. The instructor or one or more students is making a direct presentation, either by speaking or by speaking while demonstrating. This code is used if an instructor is giving general instructions, is carrying out direct instruction, or is conducting a discussion in which he/she does the large bulk of the talking.

D DISCUSSION. Relatively free interchange of conversation among or between a group, including teachers or students. This code should be used when the conversation is relatively undirected. Other codes should be used for directed

Codes

question-answer interchanges. It is not essential that everyone in the group enter the discussion, but it should be possible for anyone who wants to.

S SEATWORK. Students are assigned to their seats or work areas, and are told to work individually or in small groups on assigned or free-choice projects. Students need not necessarily be seated, but should be working independently of the instructor's direction for the most part. The instructor may circulate about, helping individuals.

R RECITATION/READING. Situations in which a student reads or recites aloud as a direct assignment. This includes group reading in unison, as well as individual recitation. Extemporaneous presentation by students is included.

Q QUESTION-ANSWER. Students are given direct questions and are expected to give direct answers. This code is also applicable in the reverse situation, where students are free to raise questions with the instructor. If the observer is uncertain, the D code should be used to descirbe a discussion with some questions and answers.

A AUDIO-VISUAL. The primary focus is on an audio-visual presentation such as a movie or a record.

C GAME. Situations in which there is an obvious game element, including competition between individuals or by an individual with him/herself. (e.g. commercial games: Concentration, free form games: 20 Questions)

V VISUAL DEMONSTRATION. Primarily a visual presentation with the verbal portion of secondary importance.

FEEDBACK

This general field includes codes describing the instructor's use of informative feedback responses, positive and negative. The Pattern field refers to the type of feedback, the mechanisms used to communicate, and the immediacy of any feedback. The Sign field indicates whether the feedback is positive or negative and whether it is diffuse or specific to performance on a particular task.

EVENT FORM - CONTENT

FEEDBACK PATTERN

Codes

D DELAYED VERBAL. The instructor tells the student about his/her performance, but only after a substantial period of time has elapsed.

M IMMEDIATE VERBAL. Instructor tells the student about his/her performance immediately or as an evaluation at the end of an activity.

E NONVERBAL EXPRESSION. The instructor shows by facial expression or obvious body postures what his/her reaction to the student's performance is. (This code should only be used when the evidence is fairly clear.)

P PHYSICAL CONTACT. The instructor touches the student, gives a hug or uses physical restraint, or guides movement of an individual by direct physical contact. This code also applies to physical presence of the instructor when this is used as a deterent to an action.

T TOKEN. Tangible symbols related to the student's performance (e.g. stars, smiley faces, checkmarks, food).

W WRITTEN. Written responses to a student's behavior on performance, possibly as brief as "good", as well as longer, more detailed messages.

FEEDBACK SIGN

This field indicates the kind of feedback and the use of feedback with a two-column code in which the first letter is the direction and the second letter is the degree of specificity.

Codes

+_ Affective, connotative impressions that are largely positive in character. This includes all situations in which the teacher informs the student that something has been done correctly, or is otherwise desirable.

-_ Situations in which the feedback refers to errors, mistakes, or other undesirable activities of a student.

,B_ BOTH of the above (+ and -).

_U UNDIFFERENTIATED. Feedback which is not related to a specific task performance. "You children are good today" would be an example.

EVENT FORM - CONTENT

Codes

_T TASK SPECIFIC. Feedback related to responses of a student on a specific task, or to identifiable behavior patterns. "I like the way you are all ready to listen" would be an example of this type of feedback, even though the specific response might vary from child to child.

_B BOTH or the above (undifferentiated and specific).

EVENT FORM

RESPONSE

This category records the participation of the students in classroom activities. The observer should try to arrive at a characterization that is typical for the group of students in each of the fields. If there is major variation in response within a group, this information should be recorded as a comment. Included in this category are Task, Focus, Social Interaction, and judgments about Contact with Instructor, Output Rate, Performance, Attention/Involvement, Physical Activity, and Noise.

TASK

This is a record of what task the students have been assigned. There may be a discrepancy between what the students are doing at any point and what they have been told to do. Major variation between the assigned task and the actual task being performed should be noted as a comment. If students are performing the assigned task slowly or poorly, this is indicated in the appropriate Response fields.

CODES

L — LISTEN. The assigned task is primarily to listen. This would include situations in which students are being lectured to or are listening to other students reciting. If only one or two students are speaking and most of the children are passively listening or looking, then this code would be used for the group as a whole.

S — SPEAK. A situation in which the majority of the children are expected to say something at one time or another. It would include free-form discussions, question-answer situations with active interaction, and group recitations excluding reading.

R — READ SILENTLY. The principle task is to read silently, either assigned or free choice.

A — READ ALOUD. The major task of either the group as a whole or of individual students is to read from a text or other written material.

W — WRITE. Workbook exercises as well as other writing assignments. This

CODES

would include activities in which a pen, pencil, or crayon is used for something besides artwork. It would include exercises at the chalkboard.

P PHYSICAL ACT. Any overt physical activity, other than reading, writing or speaking, that accomplishes an assigned task. This includes artwork, working with manipulative materials, and so on.

X NONE. This code should be used in situations in which a child is waiting to be assigned a task and has nothing to do. This should not be used to code situations in which a child is "goofing off". If a task has been assigned and the child ignores it or otherwise refuses to do it, the appropriate task code is assigned and Performance is coded as Low.

FOCUS

This category refers to the center of the attention of the majority of a group of children. The code refers to the actual focus, not to the assigned focus. For example, if the instructor is trying to gain the attention of a group, but the children are all looking outside a window at a passing circus, then the focus would be coded S, Something Else, instead of N, Instructor.

N INSTRUCTOR. Focus on the person who is giving instruction or directing the group.

C CLASSMATE. Focus on one or more children, who might be reciting or demonstrating.

L LEARNING MATERIAL. Focus on a book, workbook, or other instructional materials.

S SOMETHING ELSE. Attention is focused on something other than relevant task material. If relevant focal attention is properly given to something other than the three previous categories, then this should be noted as a special comment. The S code should be used when children are focused on something other than the primary instructional activity. If the children in a group are simply distracted and not paying close attention to anything, this is coded under Attention/Involvement.

EVENT FORM - RESPONSE

Ratings of Group Response

The following fields use a scaled judgment for recording the general character of student participation. The ratings to be entered on the EVENT FORM are:

H - HIGH
M - MEDIUM
L - LOW
or X - NONE

For group response, the observer must create a frame of reference based on his experience in classrooms. This necessarily involves a considerable element of subjective judgment and hence may vary somewhat from one observer to another. The frame of reference that will be most useful for comparison across observers would be a classroom with reasonably attentive children, who generally do what they were assigned to do. Although they are occasionally inattentive, wiggle a bit, they remain relatively stationary and quiet during reading and math instruction. When target students are being judged in these fields, the frame of reference for judgment of each individual student should be the group level within his classroom. Thus, if a particular child is making a fair amount of noise in absolute terms but is substantially quieter than his peers, he would be rated as low.

CODES

SOCIAL INTERACTION

H,M,L or X

This field describes the level of student-student interchanges. The observed social interaction need not only involve talking. Passing notes, sign language, and other means of communication should also be considered.

CONTACT WITH INSTRUCTOR

H,M,L or X

This field refers to the degree to which a student is involved with the instructor, either through verbal communication, attention, hand-waving, or any other efforts to gain the instructor's attention. A student might be giving his full attention to the instructor at a time when he was assigned a task requiring independent work, in this case, instructor contact would be H - HIGH and Attention/Involvement with the task would be L - LOW. The opposite pattern might also be observed.

EVENT FORM - RESPONSE

CODES

OUTPUT RATE

H,M,L or

This field refers to the amount of work being produced by a student. Quantity rather than quality of the work completed is judged in this field.

PERFORMANCE

H,M,L or

This field refers to the quality of the student's work. The observer may have to circulate among students and examine their work individually to get some idea of what the general performance level is.

ATTENTION/INVOLVEMENT

H,M,L or

This field refers to the degree to which a student is attending to the assigned task, and is involved in carrying out the task.

PHYSICAL ACTIVITY

H,M,L or

This field refers to the amount of physical movement typical of a group. An individual student may be moving about the classroom excessively, or may be wiggling in his seat a great deal. The HIGH rating should be assigned if the amount of activity in a group is considerable, whether or not it is sufficient to create distractions or seems otherwise excessive.

NOISE

H,M,L or

This category takes into account all sources of noise, whether produced by conversation, instructional activities, movement of furniture, or external sources of noise.

SPECIAL PROCEDURES

Target Children

When specific target children have been identified for observation, their group identity should be noted on the START FORM. They should always be considered as associated with some group, and information about the specific child recorded as a continuation of an event line. Even when a target child is a focus of an observation, enter an event line for the group, followed by one or more continuation lines for that event describing any specific information pertaining to the target child or children. A continuation line is coded as 0004 in the time column. Any fields where the status of a target child is distinguishable from the group to which he belongs are coded on the continuation line, and the identity of the target student is entered in the "target student" field. The boxes at the top of the EVENT FORM provide a place to record identifying descriptions of a child. For instance, if target child A has a red shirt and green pants, this information would be jotted in for ready identification. If a target child switches from one group to another, a group movement code (see below) will be used to record this event. Most of the time, the only information recorded for a target child will be in the GROUP RESPONSE field, but other information may be entered as needed.

It is assumed that all target children who have been identified with a particular group are described by the current codes for that group unless a specific entry is made. Whenever a new event line is recorded for a particular group, the status of all target children in the group is subsumed under the new group status. If a target child is behaving differently from other children in a group, or is engaging in different instructional activities, this situation must be recorded by a continuation entry each time an event for that group is recorded.

If a target child is the focus of attention, the continuation line for that child should have a S under Group Status. The Status code on the Group

event line would be a B in most situations. If a Status code is not recorded for a target student continuation line, it is assumed that the Group Status also applies to the target child.

MOVEMENT BETWEEN GROUPS

Movement of students from one group to another, from outside the classroom into a group, or to the outside from a group, are all recorded by a special event line code. The Time at which the event occurs is recorded as usual, M is recorded under Status, and the remaining fields are used according to a unique format described below.

The Group I.D. field is used to indicate the Group I.D. to which the children have moved. The Number field is used to record the number of children involved in the movement. The Grid field is used to record the Group I.D. from which children came. If children leave the room, the Group I.D. field is 0, and if children come from outside to a group, the Grid field is 0. If there is an interchange of students between two groups, this should be recorded as two movement events. If two groups merge, the I.D. of the larger group should be used as the "TO" I.D. If a group moves from one location to another, this is handled by a regular event line, with the appropriate change recorded in the Grid field.

If target children are involved in a transfer from one group to another, the labels of the target children are recorded in the INSTRUCTOR field. For instance, if target children A and B were part of a group of six students moving from group 3 to group 4 at 1:30 p.m., this event would be recorded as follows: |1330|M|4|06|3|A B|

FORMATION OF A NEW GROUP

If a new group is formed at any time, the observer records this event by filling out completely the next line on the observation form. A new Group I.D. will be recorded and the appropriate codes for all categories entered

so that there will be a complete description of the group's situation. Information about the new group should be recorded later on the START FORM. If the classroom is an especially active one, the observer may have to rely on a few comments, and fill out the initial descriptive line after the observation is completed.

CODES

SPECIAL CODES

There are two general codes that may be used in almost any field. One is the stop code (X) and the other is the uncertainty code (?).

X

STOP. The STOP code is used to indicate (1) that a category which has been previously coded is no longer applicable to the observed group's activity and (2) that no new code is appropriate. In practice, this code will be used infrequently, since an earlier code will usually be replaced by a new code. However, there are cases when the use of the STOP code is essential. For example, if Direct Instruction in Reading is terminated, the code X would be entered in the ROLE field under the INSTRUCTOR category when the instructor does not assume any new and definable role (such as F, facilitation, or P, preparation). X would also be used if the instructor is unoccupied while waiting for the class to carry out a task. Another example of the use of the STOP code occurs if the teacher has children put away their readers and begins a discussion. Since Materials are no longer in use, the MATERIAL field would be irrelevant to the new event. This fact would be noted by recording X under Material. The STOP code may be used in initializing where the field does not apply.

?

UNCERTAINTY. This code is used only when the observer is completely unable to code a field with any reliability. If the events in the classroom are changing very rapidly, it may be impossible to code completely for all fields, although ideally any significant change in any field would be recorded

as part of an event. The ? code might also be used if it is impossible to observe the material used by a group, the nature of the feedback sign, or a target child's performance. This code should be used as seldom as possible. It is available for those cases when the observer is unsure of the appropriate code or lacks complete information about an event. In most instances, the event line containing ? should be followed by a Comment line in which the problem is explained in more detail.

RAMOS
Summary and Debriefing

After a day of observation has been completed, three summary records should be completed. These are the general descriptive comments, classroom summary record, and the overall summary record.

General descriptive comments. At the end of an observational day, as soon as possible, the observer is to answer the three sets of questions on this form. There is no need to repeat information that is already recorded on the START and EVENT FORMS in the other portion of the RAMOS system. Very often, additional information will be helpful in getting a characterization of the classroom. Some of the information to be entered on this sheet may have to be obtained by talking to the teacher. When completing this form, be as brief and clear as possible.

Classroom summary record. This form contains a number of scales which are used for a general characterization of various aspects of the classroom. Select one of the categories as most appropriate and make a check there. If your judgment needs to be qualified, or if none of the categories is in any way appropriate, write a brief description in the comments section.

Observation overview. On this form, a summary judgment about how time was spent in the classroom is to be recorded. The focus is on three major areas, Instructor, Reading, Mathematics. In each of these areas, selected RAMOS categories are presented along with their codes. After reviewing the observations you have completed during the day, go through each of the categories according to the following instructions. Select a single code which best represents how time was spent in the classroom during the observational period, and write a 1 in the OB column (OB for observer). In some instances, two or even three codes may seem equally appropriate for this judgment. If so, mark a 1 for each of the codes. However, whenever possible, try to make a decision about which one code most accurately characterizes the general activity in the classroom.

Summary and Debriefing

If, after reviewing the records, you can distinguish another category in which a substantial amount of time was spent, but clearly less than for the previously marked codes, record a 2 in the OB column. If other codes applied, but only rarely and for short periods of time, make a check mark in the OB column. Leave blank any codes that do not apply.

You will note that a number of the RAMOS categories are repeated in the reading and mathematics section. Material, aim, activity, feedback, and the group response categories are all recorded independently for reading and mathematics.

Instructor debriefing. After the observation overview has been completed, you may use this form to inform the instructor about the results of your observation. You should review the categories used in RAMOS and describe the meaning of your overall summary, that 1 indicates a code in which a considerable amount of time was spent, 2 indicates a code in which noticable but substantially less time was spent, and check marks as codes which were minimally applicable. If the instructor's perception is at variance in any categories, this information should be recorded under the T column using the same procedures followed earlier for the OB column. You might also use the debriefing period to obtain any other information needed from the instructor and to answer any questions that the instructor might have. Try to avoid telling the instructor very much about the RAMOS system--this is time-consuming and although a few brief remarks might be appropriate, our experience is that teachers prefer that you not go into detail. Do not make any subjective evaluation of the teacher's classroom performance, either positive or negative, or any comparative judgments about teachers. Try to restrict your remarks to the observational facts that are summarized in END-OF-OBSERVATION OVERVIEW.

APPENDIX B

Reading Class

READING CLASS

A Sample Protocol for a RAMOS Observation

This is a first-second combination with a teacher and a teacher aide. There are 25 children present when you start the START form at 9:03. All of the children are sitting on a rug near the teacher. They are planning the day and marking a calendar and counting the days that have passed. There are three groups listed on the board. No target children.

9:08 "Time to get to work. Green Group go to your tables. Yellow Group has free time. Blue Group come with me to the reading circle. Mrs. Shaw will help the Green Group when she gets here." There is general movement as children go to their assignments.

9:12 Six children go to tables and begin to work in Sullivan workbooks with markers and pencils. Nine others go to the crafts area. Five of these begin to cut and paste at a table, two begin to color, two more start painting. The other ten students get chairs and sit in a circle with the teacher by the chalkboard. She has a stack of Ginn Level 2 books. This takes some time and the teacher is giving verbal directions to children from her seat.

9:14 Two more children enter. One of them has Red Cross money. The teacher says, "I forgot to collect the money." Several children bring money to the teacher. The Sullivan children keep working through all the confusion. Everyone else is chatting and there is much movement. The two late-comers go to the crafts area and begin to weave.

9:18 "Everyone get back to work!" The teacher writes words on the board and has the group read them aloud. She writes known words with the same endings as hints. She smiles a lot. The children seem attentive, but it is impossible to tell who can read what.

9:25 "Open your books to page 13 and read the story to yourselves." They do so without help.

9:26 One painter paints another. The teacher moves to the painter and takes him to a "Thinking Chair." She gets a three minute egg timer and leaves it

with him. She speaks firmly about his behavior. The Blue Group watches. The Sullivan children work. The rest of the children gather around the painted one. The teacher returns to the circle and tells everyone to get back to work.

9:34 The teacher asks the child to her immediate right to read the first page, says "That was very good . . . next". The children read in turn until the story is finished and then reread it one and a half times so that everyone gets a turn. The teacher tells everyone that they were "very good". They vary in reading ability.

9:40 "It is time for the next group. Do the next two pages in your workbook." The Blue Group takes their chairs to a couple of tables and begin to get out workbooks and pencils. The Yellow Group gets chairs and gathers around the teacher.

9:41 Mrs. Shaw, the aide, comes in and begins to check the work of the Green Group. She makes smiley faces for correct pages and makes plain circles around errors.

9:41 The teacher begins to talk with the children in the reading circle about a trip to the bakery. She elicits sentences, writes them if they are complete, and edits them.

9:43 The aide begins to help the Blue Group who raise their hands for help.

9:43 The teacher notices that the one in the "Thinking Chair" has not come to the circle. She says "We will wait while you wash your hands." They do.

9:44 The aide begins to give ditto papers to the Blue Group who are finished with their workbook assignment. The painter comes to the reading circle. The story is continued.

9:49 The chart story is finished. The teacher says "Oh, we have had a lovely morning". Everyone is quiet and looking at her. She moves around the room, touching individual children on the head. The ones she touches go to the door and leave for recess.

9:50 End of observation.

The forms that follow show how this protocol would be recorded in RAMOS.

RAMOS START FORM

Robert C. Calfee and Kathryn A. Hoover, Stanford, California.
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GENERAL INFORMATION

SCHOOL/LOCATION	GR	TEACHER	DATE	OBSER	SER. CODE	TIME IN	TIME OUT
Sample		2Smith				0903	0950

FOCUS

COMMENTS

GROUP INFORMATION

I.D.	LOCATION	INST	SUBJ	NUM	TARGET STUDENTS A	B	C	D	READING CURRIC.	MATH CURRIC.
1	AB	1	BNR	25						
2	V	1	R	10					GINN 360	
3	CDHJ		R	6					SULLIVAN	
4	RST		A	9						

FOCUS

COMMENTS Groups 2, 3, 4 formed at 9:12 from Group 1

INSTRUCTOR INFORMATION

I.D.	NAME	GROUP	SUBJ.	LOCATION
1	Smith	1	MBW	AB
2	Shaw	S	R	S

FOCUS

COMMENTS Mrs Shaw arrived at 9:41

CLASSROOM GRID

A	B	C	D	E
F	G	H	J	K
L	M	N	P	Q
R	S	T	U	V

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School Sample
Teacher Smith

Page 1 of 2

RAMOS EVENT FORM

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A	B	C	D

TIME	STATUS	GROUP: GROUP I.D.	GROUP: NUMBER	GROUP: GAID	GROUP: LOCATION	GROUP: DENSITY	INSTRUCTOR: INSTRUCTOR I.D.	INSTRUCTOR: CLASSIFICATION	INSTRUCTOR: ROLE	INSTRUCTOR: AVAILABILITY	INSTRUCTOR: INTERACTION	INSTRUCTOR: MOBILITY	CONTENT: SUBJECT MATTER	CONTENT: READING: Main Skill	CONTENT: READING: Second Skill	CONTENT: MATH: Main Skill	CONTENT: MATH: Second Skill	CONTENT: Main MATERIAL	CONTENT: Second MATERIAL	CONTENT: AIM	CONTENT: ACTIVITY	CONTENT: FEEDBACK: Pattern	CONTENT: FEEDBACK: Sign	RESPONSE: TASK	RESPONSE: FOCUS	RESPONSE: SOCIAL INTERACT	RESPONSE: CONTACT	RESPONSE: OUTPUT RATE	RESPONSE: PERFORMANCE	RESPONSE: ATTEN/INVOLV.	RESPONSE: PHYS. ACTIVITY	RESPONSE: NOISE	RESPONSE: TARGET STUDENT	SERIAL CODE
0908	G	1	25	A	C	W	1	T	M	G	T	S	B	X	X	X	X	X	X	X	X	X	X	X	L	N	M	M	L	L	M	M	M	
0912	T	2	10	V	C	S	1	T	M	G	T	S	B	X	X	X	X	X	X	X	X	X	X	X	L	N	H	H	L	L	M	H	H	
0912	B	3	06	D	S	D	0	X	X	X	X	X	R	D	S	R	S	X	X	W	P	P	S	S	X	X	X	W	L	M	M	H	H	L	L	
0912	B	4	09	S	T	S	0	X	X	X	X	X	A	X	X	X	X	X	X	M	P	?	?	?	X	X	X	P	L	H	L	M	M	H	H	H	
0912	B	1	00																																	
0914	T	9	27	W	?	D	1	T	M	S	T	S	B	X	X	X	X	X	X	X	X	X	X	L	X	X	X	P	N	H	M	L	L	L	H	H	
0005	The teacher stopped to collect Red cross money.																																			
0914	B	3	06	D	S	D							R	D	S	R	S			W	P	P	S	S			W	L	L	L	H	H	L	L		
0918	B	4	11																																	
0918	B	2					1		N				R	D	S	R	A				C		P	S	Q	E	+	u	A	L	M	M	M	?	?	L	L	
0925	T	2												R	S	D	S				B	X	A	S	R				R		L	L			H			
0926	T	4			R		1		P	S	T	M	B													M	−	T		S							
0926	B	2																												S							
0927	B	4																												S							
0934	T	2					1		N	G	R	S		R	A											M	+	u	A		L	M	M	N	M	L	L	
0940	T	4																																			
0940	B	2			P	S	D	0					R	?	?	?	?			W				S					W	L	?	?	?	?	?	?	?	
0941	B	3						2	A	E	G	T	M												T	+	B										

RAMOS EVENT FORM

School: Sample
Teacher: Smith

A	B	C	D

TIME	STATUS	GROUP					INSTRUCTOR						CONTENT												RESPONSE										SERIAL CODE		
		GROUP I.D.	NUMBER	GRID	LOCATION	DENSITY	INSTRUCTOR I.D.	CLASSIFICATION	ROLE	AVAILABILITY	INTERACTION	MOBILITY	SUBJECT MATTER	READING Main Skill	READING Second Skill	MATH Main Skill	MATH Second Skill	Main MATERIAL	Second MATERIAL	AIM	ACTIVITY	FEEDBACK Pattern	FEEDBACK Sign	TASK	FOCUS	SOCIAL INTERACT	PROXIMITY	OUTPUT RATE	PERFORMANCE	ATTEN/INVOLV	PHYS. ACTIVITY	NOISE	TARGET STUDENT			
1 2 3 4	5	6	7 8	9	10	11	12	13	14	15	16	17	18	19 20	21 22	23 24	25 26	27	28	29 30	31	32	33 34	35	36	37	38	39	40	41	42	43	44	45	46	47
0943	B	2					2		F	G	H								P																	
0943	T	4					1		M	S	T	S	W	X	X	X	X			X		X	X	X	X	X	X	C	M	L	L	L	M	M			
0944	B	2					2		F	S	H								P																	
0944	T	4			P	S	D	1		N	G	V	S	L	W	C	G	R			C		A	S	D	M	B	T	S	N	?	H	M	?	M	L	L	
0949	T	9						1		M	A	T	M	B	X	X	X	X			X	X	X	X	X	P	+	U	P	N	L	M	X	X	H	M	L	

TIME		GROUP					INSTRUCTOR						CONTENT												RESPONSE										SERIAL CODE		
1 2 3 4	5	6	7 8	9	10	11	12	13	14	15	16	17	18	19 20	21 22	23 24	25 26	27	28	29 30	31	32	33 34	35	36	37	38	39	40	41	42	43	44	45	46	47

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